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1                IN THE UNITED STATES DISTRICT COURT
                 FOR THE EASTERN DISTRICT OF TEXAS
2                          MARSHALL DIVISION

3   TQ DELTA, LLC.,                    (  CAUSE NO. 2:21-CV-310-JRG
                                       )
4            Plaintiff,                (
                                       )
5   vs.                                (
                                       )
6   COMMSCOPE HOLDING COMPANY,         (
    INC., et al.,                      )  MARSHALL, TEXAS
7                                      (  MARCH 20, 2023
             Defendants.              )  8:30 A.M.
8   _____

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                              VOLUME 2
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    _____
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                         TRIAL ON THE MERITS
12

13              BEFORE THE HONORABLE RODNEY GILSTRAP
                UNITED STATES CHIEF DISTRICT JUDGE
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21
                    SHAWN McROBERTS, RMR, CRR
22                    100 E. HOUSTON STREET
                    MARSHALL, TEXAS  75670
23                      (903) 923-8546
                shawn_mcroberts@txed.uscourts.gov
24

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1                    A P P E A R A N C E S

2        FOR THE PLAINTIFF:    DAVIS FIRM, P.C.
                               213 N. FREDONIA ST., SUITE 230
3                              LONGVIEW, TEXAS  75601
                               (903) 230-9090
4                              BY: MR. RUDOLPH FINK
                                   MR. CHRISTIAN HURT
5                                  MR. WILLIAM DAVIS

6                              McANDREWS HELD & MALLOY, LTD
                               500 W. MADISON ST., 34TH FLOOR
7                              CHICAGO, ILLINOIS  60661
                               (312) 775-8000
8                              BY:  MR. PETER McANDREWS
                                    MS. ASHLEY RATYCZ
9                                   MR. RAJENDRA CHIPLUNKAR

10       FOR THE DEFENDANT:    ALSTON & BIRD, LLP-NC
                               101 SOUTH TRYON STREET
11                             SUITE 4000
                               CHARLOTTE, NC  28280
12                             (704) 444-1025
                               BY:  MR. ROSS BARTON
13                                  MR. MATTHEW STEVENS
                                    MR. KIRK BRADLEY
14                                  MS. KARLEE WROBLEWSKI

15                             ALSTON & BIRD, LLP – ATLANTA
                               ONE ATLANTIC CENTER
16                             1201 WEST PEACHTREE STREET NW
                               #4900
17                             ATLANTA, GEORGIA  30309-3424
                               (404) 881-7000
18                             BY:  MR. MICHAEL DEANE

19                             THE DACUS FIRM, PC
                               821 ESE LOOP 323, SUITE 430
20                             TYLER, TEXAS  75701
                               (903) 705-1117
21                             BY:  MR. DERON DACUS

22       OFFICIAL REPORTER:    SHAWN M. McROBERTS, RMR, CRR
                               100 E. HOUSTON STREET
23                             MARSHALL, TEXAS  75670
                               (903) 923-8546

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EXAMINATION

1   THE COURT: Be seated, please.

2   Are the parties prepared to read into the record those

3   items from the list of pre-admitted exhibits used during last

4   Friday's portion of the trial?

5   MR. WILSON: Yes, Your Honor.

6   THE COURT: Please go to the podium and proceed.

7   MR. WILSON: Your Honor, Ty Wilson on behalf of

8   Plaintiff TQ Delta, and the exhibits admitted by TQ Delta at

9   trial on Friday, March 17th, 2023, were Exhibit 1, Exhibit 2,

10   Exhibit 4, Exhibit 5, Exhibit 6, Exhibit 7, Exhibit 8, Exhibit

11   25, Exhibit 34, Exhibit 35, Exhibit 68, Exhibit 119, Exhibit

12   120, Exhibit 121, and Exhibit 123, your Honor.

13   THE COURT: And these are all Plaintiff's exhibits.

14   MR. WILSON: Yes, Your Honor.

15   THE COURT: All right. Is there any objection from

16   Defendant?

17   MS. WROBLEWSKI: No objection, Your Honor.

18   THE COURT: Does the Defendant have any exhibits to

19   read into the record?

20   MS. WROBLEWSKI: Yes, Your Honor.

21   THE COURT: Please proceed.

22   MS. WROBLEWSKI: Karlee Wroblewski on behalf of

23   CommScope. And our exhibits admitted on Friday, March 17th,

24   were Exhibit 81.

25   THE COURT: All right. Any objection from

1   Plaintiff?

2   MR. WILSON: No, Your Honor.

3   THE COURT: All right. Thank you, counsel.

4   Mr. Davis, is Plaintiff prepared to continue with its

5   case in chief?

6   MR. DAVIS: We are, Your Honor.

7   THE COURT: All right. Let's bring in the jury,

8   please.

9   (Whereupon, the jury entered the courtroom.)

10   THE COURT: Welcome back, ladies and gentlemen.

11   Hope you had a nice weekend. Please have a seat.

12   We will continue with the Plaintiff's case in chief.

13   Plaintiff, call your next witness.

14   MR. DAVIS: Your Honor, plaintiffs call Ms. Abha

15   Divine.

16   THE COURT: All right. Ms. Divine, if you'll come

17   forward and be sworn by the Courtroom Deputy, please.

18   (Whereupon, the oath was administered by the Clerk.)

19   THE COURT: Please come around, have a seat on the

20   witness stand.

21   MR. DAVIS: Your Honor, before I begin my direct

22   examination, last Friday Mr. Tzannes testified. May he be

23   excused?

24   THE COURT: Any objection from Defendant?

25   MR. DACUS: No, Your Honor. Thank you.

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 1                THE COURT:  Mr. Tzannes may be excused.

 2                MR. DAVIS:  Thank you, Your Honor.

 3                THE COURT:  If you'll adjust the microphone when

 4    you're ready.

 5                THE WITNESS:  Yes, Your Honor.

 6                THE COURT:  Mr. Davis, you may proceed with direct

 7    examination of this witness when you're ready.

 8                MR. DAVIS:  Thank you, Your Honor.

 9                     ABHA SING DIVINE, SWORN,

10    having been duly sworn, testified under oath as follows:

11                         DIRECT EXAMINATION

12    BY MR. DAVIS:

13    Q.   Good morning, Ms. Divine.

14    A.   Good morning.

15    Q.   Would you please introduce yourself to the jury?

16    A.   Sure.  My name is Abha Sing Divine.

17    Q.   And what is your role at TQ Delta?

18    A.   I'm the founder and managing director.

19    Q.   And why are you here today?

20    A.   I'm here to answer questions about TQ Delta and my role

21    there.

22    Q.   Where do you live?

23    A.   I live in Austin, Texas.

24    Q.   And how long have you lived there?

25    A.   About a little over 30 years.
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1   Q.   And are you married?

2   A.   I am.

3   Q.   For how long have you been married?

4   A.   Just about 30 years next week.

5   Q.   Do you have any children?

6   A.   I do.

7   Q.   A boy or girl?

8   A.   A boy.

9   Q.   Okay. How old is he?

10   A.   My son is 21.

11   Q.   All right. Is he in college?

12   A.   He is.

13   Q.   And did you attend college?

14   A.   I did.

15   Q.   Where did you go?

16   A.   I went to Southern Methodist University in Dallas.

17   Q.   Did you get any degrees there?

18   A.   I did.

19   Q.   What did you get a degree in?

20   A.   I received a Bachelor's in electrical engineering and a

21   Bachelor's in applied math.

22   Q.   And do you have any advanced degrees?

23   A.   I do.

24   Q.   From where?

25   A.   I went to the Massachusetts Institute of Technology, or

1   MIT, and I earned my master's in electrical engineering there.

2   And then I went to the University of Texas at Austin and

3   earned my master's in business administration there.

4   Q.   And after graduating from MIT, what did you do?

5   A.   I went to work for IBM in Austin.

6   Q.   And what year was that?

7   A.   That was 1991.

8   Q.   And what did you do for IBM?

9   A.   So in graduate school, I was working on efficient ways to

10   make digital video traverse or go across networks, and I

11   continued that work at IBM.

12   Q.   And after your work at IBM, what did you do?

13   A.   I went to work for a small start-up called On Demand

14   Technologies.

15   Q.   Okay. And after On Demand Technologies, where did you go

16   work?

17   A.   I was recruited to Southwestern Bell, which was later

18   renamed to SBC Communications, and then later acquired AT&T.

19   Q.   And what year was that that you began working at -- I'm

20   just going to call them AT&T if that's okay?

21   A.   That's fine.

22   Q.   What year did you begin working at AT&T?

23   A.   1994.

24   Q.   And at a high level, how would you summarize your career

25   at AT&T?

1   A.   So I was there about 15 years, and so I had a lot of

2   different roles. But the basic focus of my time there was I

3   was helping them to transform from a traditional telephone

4   company to a data networking and services company.

5   Q.   And how did you help AT&T transition from telephone

6   company to data company?

7   A.   Well, one of the first things that I worked on was a

8   video services effort to bring video services over a

9   fiberoptic network and what would be a second overlay network

10   to the telephone network that we had.

11   Q.   And, again, what years was this?

12   A.   That was when I first started, so mid '90s.

13   Q.   And you mentioned fiber overlaid network. Is that

14   sometimes called FTTH?

15   A.   It is. It's fiber to the home.

16   Q.   And what is FTTH?

17   A.   So, again, the company was looking at bringing the fiber

18   network closer to homes to be able to provide a high speed

19   data network, and so it's called fiber to the home for that

20   reason.

21   Q.   And did AT&T, did that end up being an option for data

22   services that they adopted?

23   A.   Not really. So it worked well in the lab. It was

24   certainly a fast network, but when we took it to trial or test

25   in the first small community, it turned out to be just far too

1   expensive to bring fiber to every home; and it was too time

2   consuming; and it -- you know, it disrupted, of course,

3   people's homes and streets because we had to trench to put in

4   a new network.

5   Q.   And did you have any other roles or responsibilities at

6   AT&T?

7   A.   I did. So once we decided that fiber network -- fiber

8   overlay network wasn't viable, I went on to work as head of

9   corporate strategy, vice president of corporate strategy for

10   the company, and to continue that transformation from a

11   telephone company to a data network and services company.

12   And one of the first projects that I worked on was how

13   to, you know, again, how to solve this problem of bringing in

14   high speed network to customers. And so we had a project

15   called project pronto.

16   Q.   What is project pronto?

17   A.   So project pronto was a $6 billion investment that the

18   company made to bring DSL services to all of its customers.

19   Q.   And was that project successful?

20   A.   It was. Over time, we became the largest DSL provider in

21   the United States.

22   Q.   And why was it successful?

23   A.   Well, so again, it allowed us to use our existing

24   telephone network, the copper network that had been in the

25   ground for, you know, obviously some time, to now bring data

1   services instead of just voice services to the -- to

2   customers' homes. So it provided the high speed network that

3   everybody wanted, but it also meant we could do it quickly

4   because we didn't have to, you know, trench ground, do that

5   kind of thing, and it was cost effective, of course, because

6   we were reusing our existing network.

7   Q.   Now, you said the fiber network was already in the

8   ground. Did the project pronto also utilize telephone wires

9   in the air?

10   A.   Yes. I'm sorry. So the fiber network was not already in

11   the ground; the telephone network, the copper network, was

12   already in the ground and -- or in the air. You know, you see

13   them in both ways. Sometimes we run them in the ground;

14   sometimes we would have aerial.

15   Q.   Now, did you have any other roles at AT&T?

16   A.   I did. Over the course of time, other -- started other

17   business units. One, for example, was AT&T Knowledge

18   Ventures.

19   Q.   What is AT&T Knowledge Ventures?

20   A.   It was a business that they asked me to set up and lead,

21   as president and CEO, to own, manage, and license the AT&T

22   intellectual property portfolio, which includes, you know, of

23   course, all the patents.

24   Q.   And so what did you do in your role there as CEO of AT&T

25   Knowledge Ventures?

1   A.   Well, I did -- I, my team, we all did a few things. One

2   was to -- to protect or -- or develop the portfolio of

3   inventions that came from that significant ongoing R&D

4   investment that the company was making.

5   We brought -- we were there to identify what were the

6   strongest and -- and most valuable patents and inventions that

7   others might want to use and license and then, of course, to

8   negotiate those kinds of licenses.

9   Q.   So why did a company as large as AT&T need to start a

10   separate company for managing IP?

11   A.   Well, licensing and managing an IP portfolio is a

12   business unto itself, and it requires specialized skills,

13   special -- specialized capabilities of the team and, of

14   course, separate funding.

15   Q.   And how long were you at AT&T Knowledge Ventures?

16   A.   It was about four years.

17   Q.   And why did you leave?

18   A.   I wanted to start -- I wanted to take the model that we

19   had developed and -- and start my own -- my own business.

20   Q.   And did you start your own business?

21   A.   I did.

22   Q.   When was that?

23   A.   In 2012.

24   Q.   And what was that -- what was one of the companies that

25   you started or the company that you started called?

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1    A.    TQ Delta.

2    Q.    And why was TQ Delta formed?

3    A.    It was formed to own, manage, develop, and license the

4    portfolio that we acquired from Aware for which Mr. Tzannes is

5    a significant inventor.

6    Q.    Now, does TQ Delta own the patents in this case?

7    A.    It does, and many more.

8    Q.    Can you please explain to the jury how TQ Delta manages

9    or performs its role in managing the patents at issue in this

10   case?

11   A.    Sure.  Well, we continue to develop and -- develop new

12   inventions, solve new problems.  We bring those -- we serve at

13   the ITU.  We are members there and help to solve emerging

14   problems and -- and new issues in DSL, and we license the

15   portfolio.

16   Q.    So what new inventions has TQ Delta and its relationship

17   -- through its relationship with Mr. Tzannes continued to

18   contribute?

19   A.    So we worked on problems related to G.INP, G.fast,

20   MG.fast, other -- other areas.  These relate to things to

21   reduce the -- the impact of noise, to improve density of -- of

22   network, data traffic, and improved power efficiency.

23   Q.    And are those DSL technologies?

24   A.    They are.

25   Q.    And are they now part of DSL standards?
```

1   A.   They are. We brought them to the ITU, and the ITU has

2   adopted them into the standard.

3   Q.   Okay. And has TQ Delta licensed the patent portfolio at

4   issue in this case?

5   A.   We have.

6   Q.   Now, how much did TQ Delta pay to acquire the patent

7   portfolio from Aware?

8   A.   We paid $16 million.

9   Q.   And does that $16 million represent the value of the

10 entire portfolio?

11 A.   No.

12 Q.   Okay. And why not?

13 A.   Well, the value of a portfolio is really tied to the

14 extent of its use in the market. It's not tied to what you

15 paid for it or even what it costs to develop a patent

16 portfolio.

17 Q.   Now, when you were negotiating licenses at AT&T, did

18 anyone ever say to you, we'd like to know how much you paid to

19 acquire these patents or how much you spent on R&D to develop

20 these patents as part of those licensing negotiations?

21 A.   No, they -- that was never a topic of conversation.

22 Q.   When did you first reach out to CommScope in this case?

23 A.   I believe it was July of 2013.

24   MR. DAVIS: Mr. Diaz, could I please have Exhibit

25 110 at page 364?

1   Q.   (BY MR. DAVIS) Ms. Divine, can you see this document and

2   tell us on the screen?

3   A.   Yes. Yes.

4   Q.   What is this?

5   A.   This is the letter that we sent to Pace Americas as our

6   outreach to introduce TQ Delta.

7   Q.   Okay. Who is Pace Americas?

8   A.   So Pace Americas is a DSL equipment company.

9   Q.   And have you ever heard of a company called 2Wire?

10   A.   Yes.

11   Q.   Who is 2Wire?

12   A.   2Wire was also a DSL equipment company that was acquired

13   by Pace.

14   Q.   Okay. So if I understand, Pace acquired 2Wire. Is that

15   what you're saying?

16   A.   Yes.

17   Q.   And has anyone acquired 2Wire?

18   .

19   A.   Pace acquired 2Wire.

20   Q.   I'm sorry. Has anyone acquired Pace?

21   A.   Yes.

22   Q.   Who was that?

23   A.   That was ARRIS.

24   Q.   And has anyone acquired ARRIS?

25   A.   Yes.

1   Q.   Who is that?

2   A.   CommScope.

3   Q.   So if we see Pace, ARRIS, 2Wire in these communications,

4   you'll understand -- and I refer to them as CommScope, you'll

5   understand that we're referring to CommScope in this case?

6   A.   Yes.

7   Q.   Back to Exhibit 110 at page 364, why did TQ Delta send

8   this letter?

9   A.   So we were trying to introduce ourselves and the

10   portfolio of DSL patents that we had acquired, and we're

11   trying to reach out to give them some information and invite

12   them to license -- to enter into licensing discussions.

13   MR. DAVIS: Could we have the next page, please, Mr.

14   Diaz?

15   Q.   (BY MR. DAVIS) What is this, Ms. Divine?

16   A.   So along with the letter, we included a short

17   presentation that provided an overview of -- of the portfolio

18   and its uses.

19   MR. DAVIS: And could we have the page ending in

20   376, please, Mr. Diaz?

21   Q.   (BY MR. DAVIS) And what is this, Ms. Divine?

22   A.   So this was another attachment in the package, and it's a

23   mutual standstill and confidentiality agreement.

24   Q.   What's a confidentiality agreement?

25   A.   It's an agreement that parties typically enter into to

1   share sensitive information privately, so that would be things

2   like, you know, sales data or technical information, that kind

3   of thing.

4   Q.   And why did you attach this agreement to your initial

5   leather?

6   A.   So, again, we were -- we were opening a dialogue --

7   trying to open a dialogue to enter into licensing discussions

8   with now CommScope to discuss the patents and discuss their

9   uses and establish a license.

10   Q.   And is it typical when you're engaging in those kinds of

11   discussions to have this kind of agreement to begin those

12   discussions?

13   A.   Yes. It's generally the first step.

14   Q.   And is it typical for companies to share confidential

15   information in these discussions?

16   A.   It is.

17   Q.   What's an example of the kind of information that would

18   be shared during these discussions?

19   A.   So it would be, you know, unit sales. It would be what

20   standards they -- in this case what standards they practice,

21   what the features are of their products, that sort of thing.

22   MR. DAVIS: Could we have page 367 of Exhibit 110,

23   please, Mr. Diaz?

24   Q.   (BY MR. DAVIS) And what are we showing on this page, Ms.

25   Divine?

1   A.   So this is one of the pages of that presentation we were

2   just talking about, and this is, again, giving some background

3   on the portfolio that -- and who TQ Delta is, that we're a

4   technology development and innovation company, we focus on DSL

5   industry, and this is a portfolio that had been developed over

6   20 years by Aware and that we're willing to license the

7   portfolio.

8   MR. DAVIS: Could we have slide 4, the next page,

9   please?

10   Q.   (BY MR. DAVIS)   What are you communicating to CommScope

11   on this page of the presentation?

12   A.   So this page describes at a high level the portfolio, the

13   size of the portfolio in terms of families, numbers of issued

14   patents, where it has coverage, so it's worldwide in coverage,

15   how early the inventions were, and that there were a lot

16   of -- 275 forward citations.

17   Q.   And what is a forward citation, Ms. Divine?

18   A.   So forward citation in a patent is when a subsequent

19   patent applicant refers back to or includes a reference to a

20   prior patent or invention, and it's -- that they deem

21   foundational, something that they're building on top of.

22   Q.   And is 2Wire listed in that list of companies that have

23   forward cited TQ Delta's patents?

24   A.   Yes.

25   Q.   So when CommScope received this presentation and the

1   proposed confidentiality agreement and the letter in 2013, did

2   they know who Aware and Marcos Tzannes were?

3   A.   Yes.

4   MR. DAVIS: Could we have slide 25, please, Mr.

5   Diaz?

6   Q.   (BY MR. DAVIS) What's on this slide, Ms. Divine?

7   A.   So this is, again, as we're going through the overview of

8   the portfolio, the standards at that time that we felt that

9   the patents covered and the standards that were related.

10   Q.   And what are the standards at issue in this case?

11   A.   In this case it's VDSL2, G.INP, and ethernet bonding or

12   bonding.

13   MR. DAVIS: Could we have the last slide please,

14   slide 11?

15   Q.   (BY MR. DAVIS) What are you communicating here?

16   A.   So this is the framework that we are proposing to help

17   move the licensing discussions along. So, as I said earlier,

18   enter into that confidentiality agreement so that the parties

19   could share information that they might deem sensitive; have,

20   you know, technical discussions; answer any questions about

21   the patents that -- that people might have; and then discuss

22   the financial and business terms of the license and then

23   hopefully negotiate the license agreement.

24   Q.   And did TQ Delta share technical information about its

25   DSL patents with CommScope?

1   A.   We did.

2   Q.   Did CommScope share any technical information with TQ

3   Delta about how its products work?

4   A.   No.

5   Q.   What information were you expecting CommScope to share

6   after sending this letter?

7   A.   Well, certainly we would have expected them to -- to tell

8   us if they had questions about the technology or the patents

9   and the sales information because we needed that to understand

10 the extent of their use.

11   MR. DAVIS: Could we have Exhibit 117, please, Mr.

12 Diaz.

13 Q.   (BY MR. DAVIS) What is Exhibit 117?

14 A.   This is a letter from Brett Schuman to -- to TQ Delta to

15 Bruce Bernstein on August 10th of 2015.

16 Q.   And who was Brett Schuman?

17 A.   He was an attorney representing CommScope.

18 Q.   Okay. And what are you saying in this letter, Ms.

19 Divine?

20 A.   Well, this is a letter from them.

21 Q.   I'm sorry. What is Mr. Schuman communicating to you?

22 A.   So he's saying that if we want to make a licensing

23 proposal, that we should do so in the form of a lump sum

24 paid-up royalty.

25 Q.   Okay. And at this point had CommScope shared any

1   financial information with you?

2   A.   No.

3   Q.   Okay. Had they shared any information about how their

4   products work with you at this point?

5   A.   No. They continued to tell us they didn't know how they

6   worked.

7   Q.   Could you evaluate a lump -- or would you be able to make

8   a lump sum paid-up royalty proposal without that information?

9   A.   No. It would be difficult.

10   Q.   And why is that?

11   A.   Because, again, we needed to know which standards they

12   were using and how many they had sold, how many they planned

13   to sell, so that -- because a lump sum paid-up royalty is one

14   where they're asking us to tell them a number that would give

15   them a license for all their past use and all their future use

16   to the -- to the standards, to the patents.

17   Q.   Now, does TQ Delta have any information on its website

18   about its proposed royalty rates for DSL standard essential

19   patents?

20   A.   Yes.

21   Q.   And what information is -- does it disclose?

22   A.   So it discloses a range of license rates from 60 cents to

23   $3.10, and it indicates that, you know, the rates will vary

24   depending on what mix of standards somebody -- you know, a

25   licensee would be practicing, and it also indicates that, you

1   know, there -- as we negotiate, there may be opportunities for

2   discounts for pre-payment and such.

3   Q.   At this point in time in 2015, had TQ Delta entered into

4   any license agreements with -- on its DSL standard essential

5   patent portfolio?

6   A.   In 2015?

7   Q.   Correct.

8   A.   No.

9   Q.   Why not?

10   A.   Well, we had just acquired them in 2012. We were working

11   through the portfolio. We had done our diligence, reached out

12   to the market, and, you know, we're talking to various

13   parties.

14   Q.   Were you aware of any prior licenses to the TQ Delta

15   portfolio?

16   A.   Yes.

17   Q.   Okay. And who would those licenses have been with?

18   A.   So those would have been licenses that Aware entered into

19   prior to the acquisition.

20   Q.   Okay. Were any of those licenses that Aware entered into

21   similar to any -- were any of the companies that Aware entered

22   into licenses with similar to companies like CommScope?

23   A.   No. The Aware licenses that had been previously entered

24   into were with companies that were their strategic partners

25   that were chip manufacturers. And we were talking with

1   companies that were DSL equipment companies.

2   Q.   And the licenses that Aware had entered into prior to TQ

3   Delta's acquisition, what was the time period or the time

4   period that those licenses date back to?

5   A.   So they dated back to 1998, which was, you know,

6   obviously well before there was a market for DSL. So this

7   was, again, a strategic relationship, a strategic partnership

8   to develop technology and manufacture the chips and, you know,

9   grow the market.

10 Q.   Now, did you take those licenses into account when you

11 were developing this estimated royalty range for companies

12 like CommScope that you put on your website?

13 A.   Yes, we certainly considered them.

14 Q.   Okay. Now, did you believe that the licenses you just

15 described that had been entered into starting in 1998 with

16 Aware would have any impact on the rates that TQ Delta would

17 offer DSL companies like CommScope?

18 A.   No. Those -- not really because those are, as I said,

19 not similarly-situated companies.

20 Q.   Okay.

21 A.   They --

22 Q.   I think you mentioned earlier that the licenses that

23 Aware entered into with semiconductor companies were joint

24 development agreements? Did I hear you say that?

25 A.   Yes.

```
1    Q.    And what is a joint development agreement?

2    A.    So joint development agreement is a -- an agreement of

3    parties, usually close partners, that are going to work

4    together for a long period of time to develop products, to

5    develop a market, and -- and so they're going to be sharing,

6    you know, close information.  And so these joint development

7    agreements, you know, that's what they are--jointly

8    developing.

9    Q.    And what market was Aware and the companies that it had

10   an agreement with beginning in the -- 1998, what market were

11   they working to develop?

12   A.    They were working to develop the DSL market.

13   Q.    Okay.  Have you ever heard the term 'naked patent

14   license'?

15   A.    Yes.

16   Q.    And what is a naked patent license?

17   A.    So a naked patent license, unlike, you know, a

18   relationship where the two parties are working closely

19   together, they're sharing information, they're jointly working

20   on technical solutions, they, you know, provide cross licenses

21   to their patents to one another, and, you know, other payments

22   and other relationships, a naked license is one where a

23   company is using a particular invention or set of patents and

24   needs the license because they've already got their product in

25   the marketplace or the capability to deliver it, and they just
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1   need to -- to have the license to have permission to use the

2   inventions.

3   Q.   Now, the license that you were proposing to enter into

4   with CommScope, would that have been a joint development

5   agreement or a naked patent license?

6   A.   That would have been a naked patent license because

7   CommScope already had products in the market, you know, they

8   were delivering.

9   Q.   Now, when you purchased the patents from Aware in 2012,

10   were you aware of the financial terms of Aware's prior joint

11   development agreements with other companies?

12   A.   No.   Those were redacted out of the agreements that we

13   saw.

14   Q.   Okay. So how could you, you know, make a decision about

15   what would be a fair and reasonable licensing amount, royalty

16   rate for companies like CommScope in a naked patent license if

17   you didn't understand or know what the financial terms of the

18   prior joint development agreements were?

19   A.   Well, they were such different types of licenses, that it

20   really had no bearing. I mean, for example, we talked about

21   how those other companies that Aware was working with, those

22   were joint development agreements, much closer strategic

23   relationships.

24   Second, they were different parts of the industry. One,

25   you know, Aware and its partners were in the semiconductor

1   business. The DSL equipment providers are a different part of

2   the business. And the -- you know, the relationship had been

3   long-standing and strategic and there were other back and

4   forths.

5   MR. DAVIS: Could I have Exhibit 124-A, please, Mr.

6   Diaz?

7   Q.   (BY MR. DAVIS) What is this document, Ms. Divine?

8   A.   This is a letter -- well, this is an email, rather, that

9   we sent to CommScope in May of 2017.

10   Q.   Okay. And what are you telling CommScope in this letter?

11   A.   So we attached a letter and also provided a link to

12   access a lot of our technical information, details about how

13   we map to the standards and so forth.

14   Q.   Okay. And what had happened in the prior two years

15   between the last letter we looked at in 2015 and this letter

16   in 2017?

17   A.   So I believe that ARRIS acquired Pace.

18   Q.   Okay. And what was the course of your communications or

19   the nature of your communications with CommScope in those

20   licensing discussions over -- from when you first reached out

21   until now in 2017?

22   A.   So, as I said, we asked for their sales information and

23   the mix of their products, use of different standards, and you

24   know, really weren't provided that. We -- you know, we tried

25   to engage in licensing discussions, tried to have meetings,

1   and there wasn't a lot of interest in that, either.

2   And so -- and then as the merger was going on, they told

3   us, you know, hold off, we'll -- you know, let's talk after

4   the merger.

5   Q.   What did CommScope's conduct indicate to you about their

6   willingness to negotiate?

7   A.   Well, unfortunately it seemed like they were, you know,

8   they were stalling or, you know, just trying to hold out

9   rather than come to the table and -- and negotiate a license.

10   MR. DAVIS: And could we have 124-A again, Mr. Diaz?

11   Q.   (BY MR. DAVIS) And, again, what are you -- what are you

12   attaching or including in this email to CommScope in 2017?

13   A.   There's a letter that's attached.

14   Q.   Okay. And what's at the link down here at the bottom?

15   A.   So that link is, as you'll see, the claim charts that

16   were very -- very large pieces of information, so we put them

17   at this link. So technical information of how the patents

18   relate to the standards.

19   Q.   Okay.

20   MR. DAVIS: Could we have Exhibit 124-B, please?

21   Q.   (BY MR. DAVIS) And what is Exhibit 1124-B Ms. Divine?

22   A.   So this was the letter that was referred to in the prior

23   email.

24   Q.   Okay. Did TQ Delta attach a licensing proposal to this

25   letter?

1   A.   We did.

2   Q.   All right.

3   MR. DAVIS: Mr. Diaz, could you please go to page

4   583 of Exhibit 124-B.

5   Q.   (BY MR. DAVIS) Is this the licensing proposal?

6   A.   Yes. So along with, you know, the patent information and

7   the letter, we provided this license proposal to CommScope.

8   MR. DAVIS: Could we go to the next page, please,

9   Mr. Diaz?

10   Q.   (BY MR. DAVIS) And if you look at the bottom, it says,

11   For DSL CPE. What rates, royalty rates, did you propose to

12   CommScope in 2017?

13   A.   So we -- for the -- for the standards that are at issue

14   in this case, we proposed 90 cents for VDSL2 DSL CPE, we

15   proposed 25 cents per G.INP DSL CPE, and we proposed 70 cents

16   for bonding with VDSL CPE DSL CPE.

17   Q.   And what is CPE again?

18   A.   I'm sorry. That's customer premise equipment. It's the

19   modem at the house.

20   Q.   Okay. Now, I notice here in No. 5, there is a rate for

21   G.bond that says 25 cents. Why is that different than number

22   6?

23   A.   Yes. So that was for use of bonding or G.bond with ADSL

24   equipment.

25   Q.   And ADSL is not at issue in this case. Is that right?

1   A.   It is not.

2   Q.   So why in 2017 did you propose these specific rates out

3   of the range of rates that you had previously had on your

4   website?

5   A.   Well, as we learned more about the market and understood

6   discussions with others, we arrived at this range of rates for

7   the different capabilities.

8   Q.   Had you proposed these rates to any other companies?

9   A.   Yes.

10   Q.   Okay. And so if you had proposed these rates to any

11   other companies, why were you also proposing them to

12   CommScope?

13   A.   Again, we -- you know, as earlier when we talked about

14   the standards side of this, these are -- we're bound to -- we

15   promised to license on reasonable and non-discriminatory

16   basis. And so we're making that offer to the broader market

17   to come to the table and negotiate.

18   Q.   Who were some of the other companies that you had

19   proposed these specific rates to at the time of this letter?

20   A.   So Zhone and ZyXEL and others as well.

21   Q.   Had you proposed these rates to a company called Fujitsu?

22   A.   Yes.

23   Q.   Okay.

24   MR. DAVIS: Could I have Plaintiff's opening slide

25   No. 18, please, Mr. Diaz?

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 1    Q.    (BY MR. DAVIS)  Ms. Divine, do you remember in opening

 2    when I showed you this slide -- when I showed the jury this

 3    slide?

 4    A.    Yes.

 5    Q.    When did Zhone, ZyXEL, Siemens, and Fujitsu accept or

 6    enter into license agreements with TQ Delta?

 7    A.    Between 2017 and 2019.

 8    Q.    Now, how many licenses did Zhone actually enter into with

 9    TQ Delta?

10    A.    So there were two licenses to Zhone over the course of

11    time.

12    Q.    Okay.  And why were there two?

13    A.    Well, the first license that they entered into, they

14    were -- they entered into a global license, a worldwide

15    license at our rates but for a prescribed period of time, and

16    that license ended in 2019.  And so they came back to us and

17    by that time were practicing additional standards, and so they

18    trued up on all of that and negotiated a license for the rest

19    of time.

20    Q.    Now, I think you testified earlier about when you

21    proposed those specific royalty rates to CommScope, that you

22    had already proposed those rates to other parties.  And you

23    mentioned, I think Fujitsu.  Had you also proposed those rates

24    to Siemens at that time?

25    A.    Yes, I think so.
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1   Q.   Okay. And so by 2017 you had proposed these same rates

2   to a number of different parties besides CommScope. Is that

3   correct?

4   A.   That's correct.

5   Q.   Now, do you see on this slide where I had put Nokia in

6   2022?

7   A.   Yes.

8   Q.   When was the Nokia agreement signed?

9   A.   Just a few months ago in November of 2022. I'm sorry,

10   can I go back on one item?

11   Q.   Sure.

12   A.   So you asked me about Siemens. No, in 2017 we had not

13   proposed that to Siemens.

14   Q.   Okay. So the agreement was signed in 2018, but -- I'm

15   sorry, in 2018, but by -- the negotiations on that agreement

16   were shorter.

17   A.   Yes.

18   Q.   Okay. So did Nokia agree to pay TQ Delta's standard

19   royalty rates?

20   A.   No. They actually agreed to pay higher rates.

21   Q.   And why is that?

22   A.   Well, so the practice in the industry and the

23   recommendation of the ITU is to negotiate on worldwide,

24   portfolio-wide licenses for those standards, for DSL

25   standards, and Nokia wanted to license only on a U.S. and

1   leave the rest of the world unlicensed. And so in order to do

2   that, you know, they're putting -- that would put other

3   licensees by that point at a disadvantage. And so they agreed

4   to pay a premium for that.

5   MR. DAVIS: Could we go back to Exhibit 135, please,

6   Mr. Diaz? Actually, could you take that down for a second,

7   please, Mr. Diaz? Thank you.

8   Q.   (BY MR. DAVIS) So after you made the proposal to

9   CommScope in 2017, did they ever make a counterproposal?

10   A.   They did.

11   Q.   And when was that?

12   A.   In March of 2021.

13   Q.   Okay. Now, between 2017 when you proposed the rates to

14   CommScope and 2021 when they finally made a counterproposal,

15   had you provided these other license agreements that you had

16   entered into in the interim to CommScope?

17   A.   Yes, every time.

18   Q.   Okay. And they never made a counterproposal until '21?

19   A.   That's correct.

20   Q.   Okay.

21   MR. DAVIS: Could I have Exhibit 135-C, please, Mr.

22   Diaz? All right. Thank you.

23   Q.   (BY MR. DAVIS) What is Exhibit 135-C?

24   A.   So this is a letter from CommScope to us in August of

25   2021.

1   Q.   And so how long after you had made your proposal to

2   CommScope?

3   A.   This is approximately four years.

4   Q.   What's the first sentence of this email communicating?

5   A.   CommScope is thanking us for making our proposal.

6   Q.   Uh-huh. And where does it say that it's --

7   MR. DAVIS: Could we have Exhibit 135, please, Mr.

8   Diaz?

9   Q.   (BY MR. DAVIS) What is on the screen here, Ms. Divine?

10   A.   So in March of 2021, CommScope made this initial proposal

11   to us.

12   Q.   Okay. And could you evaluate this proposal at this time,

13   Ms. Divine?

14   A.   No. We didn't have their sales information or their mix

15   of product use at that time or at this time.

16   Q.   And so any time in the prior eight years from the first

17   letter in 2013 to this proposal in 2021, had CommScope, had

18   they ever provided you with the sales information you'd been

19   requesting?

20   A.   No.

21   Q.   Okay. How many times did you request it?

22   A.   I think dozens.

23   Q.   Okay. How many meetings had you had by this time?

24   A.   One or two.

25   Q.   And in those meetings did you discuss technical

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1    information as to why you believed CommScope was infringing

2    the patents?

3    A.    Certainly we explained why we thought DSL equipment that

4    practiced the standard needed a license or practiced our

5    patents, but they didn't provide us any information about the

6    technical operation of their products.

7    Q.    So let's look at the first bullet point here.  What is

8    the first bullet point under CommScope's proposal?

9    A.    So the bullet says that CommScope will pay TQ Delta

10   four-and-a-half million dollars.

11   Q.    And what's the second bullet point?

12   A.    So the second bullet point is laying out what they -- a

13   mechanism to calculate what they view as the full settlement

14   value or what they would value a license at.

15   Q.    Okay.  And what is CommScope proposing under -- as the

16   first part of how they would calculate the full settlement

17   value?

18   A.    So, yeah, there's two parts to this.  The first part

19   starts, based on revenue buckets for -- give us unit sales

20   from January 1st through the execution date, and it outlines

21   rates per unit.

22   Q.    So what is the significance of this language, January

23   1st, 2013, through execution?

24   A.    So they're saying that they want a license that

25   would -- but they would pay only through the point in time
```

1   when we, you know, agree and -- and paper this particular

2   agreement.

3   Q.   And why is that significant?

4   A.   Well, that means they don't want to -- they're not going

5   to pay for their future use.

6   Q.   And how long does the -- do the patent terms for the

7   patents at issue in this case go out to?

8   A.   To 2027, 2028.

9   Q.   So roughly 15 years? I'm sorry. I'm sorry. From 2013

10   to -- I'm sorry. So the execution date would exclude

11   anything --

12   A.   From '21 forward.

13   Q.   '21 forward.

14   A.   Yes.

15   Q.   Okay. Understood.

16   Now, are the rates that are listed here under CommScope's

17   proposal, the rates per standard, are those TQ Delta's

18   standard rates?

19   A.   Some are and some are not.

20   Q.   Okay. Which ones for the standards at issue in this

21   case, which ones are TQ Delta's standard rates?

22   A.   So VDSL, the VDSL rate at 90 cents per unit is consistent

23   with our licenses, and G.bond at 70 cents per unit is

24   consistent with our licenses.

25   Q.   Okay. And how is the G.INP rate not consistent?

1   A.   So our G.INP rate is actually 25 cents per unit.

2   Q.   Okay.

3   A.   And this is 12 and a half.

4   Q.   Now, why is there a proposed rate for ADSL in this

5   proposal?

6   A.   Well, our portfolio also includes patents that relate to

7   the ADSL2 2-plus standard.

8   Q.   Okay. And did CommScope have products that you believed

9   practiced that standard?

10   A.   It did.

11   Q.   That standard is not at issue in this case. Correct?

12   A.   Correct.

13   Q.   Okay. So what is the second part of how CommScope is

14   proposing to calculate the full settlement value, the one that

15   begins, For each bucket?

16   A.   So here they're proposing taking those unit rates that we

17   just discussed and they're saying they'll pay per unit but

18   they want a discount graduated volume discount as their

19   volumes sales grow.

20   Q.   Okay. And what are graduated volume discounts?

21   A.   So it's paying a lower and lower rate or having a higher

22   and higher discount as volumes can increase.

23   Q.   So how would the graduated volume discounts in

24   CommScope's proposal work to discount TQ Delta's -- or the

25   rates that are listed above?

1   A.   So what they're proposing here is for the first 5 million

2   units, and this is, you know, again reaching back to volumes

3   that they know but we don't know, but they'd pay a hundred

4   percent of those 90 cents, 12-and-a-half cents, 70 cents as

5   they were proposing, 40 cents, against all of the units that

6   they've sold up to 5 million.

7   And then after 5 million but up to 10 million, they want

8   to pay half of that. And then from above 10 million to 15

9   million, they want to pay 25 percent or have a 75 percent

10   discount. And then for any number of units over 15 million,

11   they want to pay 10 percent or get a 90 percent discount.

12   Q.   So in order to evaluate the full impact of this proposal,

13   what is a fundamental piece of information you would need to

14   have?

15   A.   Well, we need to know how many they had sold and how many

16   they plan to sell.

17   Q.   And at this time had they provided you with that

18   information?

19   A.   No.

20   Q.   And yet they wanted you to evaluate this proposal.

21   A.   Yes.

22   Q.   You heard on Friday when we -- during opening statements,

23   that CommScope had sold 30 million -- 36 million, roughly,

24   units. Were you there -- do you remember that?

25   A.   Yes.

1   Q.   And so over the weekend were you able to calculate, based

2   on those 36 million units, what CommScope would owe under this

3   proposal?

4   A.   Yes. So if you applied their rates and the discount

5   schedule, it would come out to about $23 million.

6   Q.   And the rates that I discussed in opening statement, were

7   those U.S. rates or worldwide rates?

8   A.   Our rates are worldwide.

9   Q.   Okay. And the -- I'm sorry. The 36 million units that I

10   discussed in opening statements, were those CommScope's

11   worldwide units or just their U.S. only units?

12   A.   No, those were just their U.S. units.

13   Q.   And are worldwide sales even at issue in this case?

14   A.   No.

15   Q.   Okay. So how will TQ Delta be able to address

16   CommScope's worldwide infringement?

17   A.   Well, we have to go country to country, you know, and

18   enforce our patents as we are here.

19   Q.   Would TQ Delta ever agree to these kind of graduated

20   volume discounts that CommScope proposes here?

21   A.   No, we really can't. Again, we have a -- we made a

22   promise to abide by reasonable, non-discriminatory terms, and

23   we have, you know, four licenses already at this point that

24   all abide to the same rates and don't provide volume

25   discounts. And so that would be treating them unfairly, the

1   people that came to the table and negotiated.

2   Q.   Okay. So I'd like to go back to the rates for just one

3   second, the -- you mentioned the G.INP rate is half of what

4   you would normally charge. Is that correct?

5   A.   That's correct.

6   Q.   And so if you were to calculate using even the discounted

7   rate here, or the half rate, for G.INP under CommScope's

8   proposal, what would they owe?

9   A.   So, again, using all of these, that would be $23 million.

10   Q.   Okay. Now, did CommScope provide for any other limits or

11   its full settlement value in this proposal?

12   A.   They did.

13   Q.   Okay. And what was that -- what are they?

14   A.   So that's the second or the next few bullets here.

15   They're proposing that, first, they want to scope a license

16   that's much broader than everybody else. So they want to have

17   a license to all of the patents for any use outside of DSL or

18   inside of DSL. That's the last bullet here.

19   Q.   Uh-huh.

20   A.   And -- sorry. And then right above that, they're

21   suggesting that they would give us some of their patents and

22   they want us to take those out to the market and license those

23   to pay off their obligation.

24   Q.   So what is -- how is CommScope proposing to pay you the

25   full settlement value that we calculated above?

1   A.   Well, they're not really. They're agreeing to pay the

2   four-and-a-half million dollars, then they want us to go to

3   the market, find other people who use their patents, and help

4   them to license them to those parties. And then for every

5   dollar, they want -- they would give us 70 cents to, you know,

6   to pay off their obligation, the remaining part of that $23

7   million.

8   Q.   And what about this 50/50 split of net proceeds

9   thereafter? What does that mean?

10   A.   Well, so the 30 cents that we didn't get out of the first

11   piece there, and then after the 23 million is paid off,

12   they're going to get that other portion, the 30 cents in the

13   first part and 50 cents for every dollar out of the second

14   part.

15   Q.   So CommScope could potentially make money off of this

16   proposal?

17   A.   Yes.

18   Q.   Does CommScope even have any DSL standard essential

19   patents?

20   A.   They do not.

21   Q.   And how do you know that?

22   A.   Well, as Mr. Tzannes testified earlier, they've not had

23   any contributions that were accepted into the standard, into

24   the DSL standards, and so, as a result, there are no SEP, or

25   standard essential patents.

```
1    Q.   And in all your years of licensing intellectual property,

2    both for TQ Delta and at AT&T, have you ever heard or seen a

3    proposal like this?

4    A.   No.

5    Q.   And had you ever heard or seen a proposal like this,

6    particularly in a negotiation for a naked patent license?

7    A.   Certainly not.

8         MR. DAVIS:  Could we have Exhibit 135-D, please, Mr.

9    Diaz?

10   Q.   (BY MR. DAVIS)  And up at the top, can you tell us what

11   Exhibit 135-D is, please?

12   A.   Yes.  So this is a letter from us to CommScope on August

13   6th of 2021.

14   Q.   Okay.  And what are you telling CommScope in this letter?

15   A.   Well, we're telling them that there are -- you know,

16   there's some problems with their proposal.

17   Q.   Okay.

18   A.   And why we -- you know, why we can't accept them.

19   Q.   So what are you saying in the first paragraph here?

20   A.   So the first paragraph says, the volume discounts that

21   they're proposing are not consistent with our existing

22   licenses.

23   Q.   All right.  And why are you particularly puzzled by

24   CommScope's statement or proposal that they would make

25   a -- let me start over.
```

1   Why are you puzzled that CommScope would make a proposal

2   like that?

3   A.   Well, again, because we'd given them all of the licenses,

4   you know, that we had entered into at this point. And so they

5   knew that that -- what the terms were and they knew that there

6   were no volume discounts. And they also knew, because, you

7   know, they're -- our activity at the ITU and theirs, that, you

8   know, we had an obligation to agree to negotiate on reasonable

9   and non-discriminatory terms.

10   Q.   And had TQ Delta in its negotiations with CommScope made

11   any concessions?

12   A.   We did.

13   Q.   Okay.

14   A.   We did.

15   Q.   And had TQ Delta used any information that it could find

16   to calculate what it estimated to be CommScope's total unit

17   sales that would be impacted in the license?

18   A.   Yes. So, you know, again, we still don't have their

19   volume data or the -- you know, what their products, you know,

20   practice in those -- you know, by volume. And so we went out

21   to public data and -- to do the best we could to try to

22   estimate it.

23   Q.   And had you made a proposal based upon that public data

24   to -- for a lump sum payment that they were requesting?

25   A.   Yes. So we knew that that's what -- you know, from

1   earlier on, that they wanted a lump sum payment. So we

2   estimated that at around $70 million.

3   Q.   And was that $70 million the actual amount they would owe

4   under TQ Delta's standard rates?

5   A.   Under the assumptions that we had from the public data,

6   but we would have -- you know, part of it was to have them

7   provide us that information and verify it as we do with

8   everyone.

9   Q.   Okay. Then what are the concessions that TQ Delta had

10   offered?

11   A.   We offered to allow them to pay it over some series of

12   payments.

13   Q.   Okay. Ms. Divine, what does CommScope's behavior in

14   these licensing negotiations over the last 10 years indicate

15   to you?

16   A.   That they've been unwilling to -- to license; that

17   they've been, you know, sitting back, sort of holding out to

18   continue to sell product without entering into a license with

19   us or negotiating in good faith to, you know, come to a

20   resolution.

21   MR. DAVIS: I pass the witness, Your Honor.

22   THE COURT: Cross-examination by the Defendants?

23   MR. DACUS: Yes, Your Honor. May we have a moment

24   to pass out binders?

25   THE COURT: You may.

1   (Pause in proceedings.)

2   THE COURT: All right, counsel. Proceed with cross

3   examination when you're ready.

4   MR. DACUS: Thank you, Your Honor.

5   CROSS EXAMINATION

6   BY MR. DACUS:

7   Q.   Good morning, Ms. Divine.

8   A.   Good morning.

9   Q.   I'm Deron Dacus. I represent CommScope. I don't think

10   you and I have met before?

11   A.   No, we haven't.

12   Q.   I'd like to ask you some questions about some of the

13   issues in the case and some of your testimony, if that's okay.

14   A.   Yes, of course.

15   Q.   I heard you talking about some of the negotiations and

16   the discussions between CommScope and TQ Delta over the past

17   few years. Correct?

18   A.   Yes.

19   Q.   And at least my understanding from what you said is you

20   were somewhat critical of CommScope. Fair?

21   A.   Yes, I believe it's a fair assessment.

22   Q.   One thing you said in your testimony is that information

23   that's shared in the course of these discussions often is

24   confidential information to the party that you're having the

25   conversation or the discussion with. Correct?

1   A.   That's true.

2   Q.   And I know you sent the non-disclosure agreement or the

3   proposal early on because you're very well aware that this

4   could involve very confidential information of CommScope.

5   Correct?

6   A.   Yes.   That's why we offer that.

7   Q.   Okay.   You understand, Ms. Divine, that, given the nature

8   of TQ Delta's business, CommScope had some very significant

9   concerns about sharing confidential information with TQ Delta.

10   You understand that?

11   A.   No, I wouldn't agree with that.

12   Q.   Okay.   Well, you understand they would not give you

13   confidential information without a non-disclosure agreement.

14   You understand that.   Correct?

15   A.   Certainly, yes.

16   Q.   Okay.   In fact, in December of 2020, CommScope and TQ

17   Delta actually entered into a non-disclosure agreement.

18   Correct?

19   A.   I believe that's correct, yes, but I think there were

20   others prior.

21   Q.   And you were pretty quick to tell us how important these

22   non-disclosure agreements are.   Correct?

23   A.   Yes.   Again, we view that as a first step.

24   Q.   And I presume that when you enter a non-disclosure

25   agreement, you should -- both parties should keep their

1   agreement and keep their promises in those agreements. Fair?

2   A.   I agree.

3   Q.   And you understand that at least part of this lawsuit is

4   CommScope's complaint that it does not believe that TQ Delta

5   is keeping its RAND promise with the ITU. You understand

6   that?

7   A.   I understand that's the position. I disagree with it.

8   Q.   Understood. And that's why we have a jury. Right?

9   A.   That's right.

10   Q.   And the Judge has said to the jury, we say you broke your

11   agreement, you say you didn't. The Judge has said the jury's

12   going to have to make a credibility determination on who's

13   more believable. Correct?

14   A.   That's my understanding.

15   Q.   Okay. So in that non-disclosure agreement that CommScope

16   and TQ Delta entered into in December of 2020, TQ Delta agreed

17   that it would treat and maintain the confidential information

18   as confidential and hold all such confidential information in

19   confidence utilizing the same degree of care it uses to

20   protect its own confidential information. Correct?

21   A.   I don't have the agreement in front of me, but

22   I -- that's typical language.

23   MR. DACUS: Your Honor, may I approach?

24   THE COURT: You may.

25   MR. DAVIS: Is this in the witness binder, Your

1   Honor?

2   MR. DACUS: Here.

3   MR. DAVIS: Oh, thank you.

4   THE COURT: Hand that to the witness, please.

5   Q.   (BY MR. DACUS) So this is the non-disclosure agreement.

6   And, in addition, if you look in paragraph 9, Ms. Divine, TQ

7   Delta agreed that "for the avoidance of doubt, the parties

8   agree that any meetings, discussions, correspondence, and

9   confidential information exchanged between the parties

10   relating to --"

11   MR. DAVIS: Your Honor, I object at this time. May

12   we approach, please?

13   THE COURT: Approach the bench, counsel.

14   (The following was had outside the hearing of the

15   jury.)

16   MR. DAVIS: Your Honor, I don't know if you've seen

17   a copy --

18   THE COURT: I haven't seen it. Is this an exhibit?

19   MR. DACUS: It's not, Your Honor.

20   MR. DAVIS: I'm not sure why Mr. Dacus is reading it

21   into evidence. He hasn't shown it to the jury, but I think

22   the paragraph he was reading from right here is saying that

23   none of the evidence exchanged will be admissible in a

24   lawsuit, which I don't understand how they can take that

25   position given that we've --

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1              THE COURT:  Well, rather than you guess what he's

2    doing with it --

3              MR. DACUS:  Yes, sir.

4              THE COURT:  -- why don't you tell me what --

5              MR. DACUS:  Absolutely, Your Honor.

6              THE COURT:  -- you're doing with it, Mr. Dacus.

7              MR. DACUS:  So the offers and stuff they just showed

8    are subject to this non-disclosure agreement where they

9    expressly agreed that they would not submit them and they

10   would not be admissible in a trial, and they just did that.

11   All of those things that they just showed the jury say,

12   Subject to the NDA, at the top, subject to this very document.

13             THE COURT:  This is not a pre-admitted exhibit.

14   It's not signed by this lady.

15             MR. DACUS:  Yes, sir, it is.

16             THE COURT:  Is it?

17             MR. DACUS:  Yes, sir, and I'm about to get to that.

18             THE COURT:  Okay.

19             MR. DACUS:  It's absolutely relevant to the issues

20   in the case and --

21             MR. DAVIS:  Your Honor --

22             MR. DACUS:  -- general credibility.

23             THE COURT:  Well, it is signed by her.  I don't know

24   how you're using it with her without it being a pre-admitted

25   exhibit.
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1   MR. DACUS: I'm just using it to refresh. I don't

2   --- I'm not going to show it to the jury. I don't need to

3   admit it. I'm not asking to --

4   THE COURT: This is not an attempted impeachment

5   with it?

6   MR. DACUS: It's not -- well, it's an attempt to

7   refresh. She said she didn't know. I mean, I don't want to

8   impeach her. I just want to ask her about it.

9   THE COURT: You can use it to refresh her

10   recollection.

11   MR. DACUS: Okay.

12   THE COURT: But reading it to the jury is the same

13   thing as publishing it, so don't do that.

14   MR. DACUS: Yes, sir.

15   (The following was had in the presence and hearing

16   of the jury.)

17   THE COURT: All right. Let's proceed.

18   MR. DACUS: Thank you, Your Honor.

19   Q.   (BY MR. DACUS) So you understand, Ms. Divine, in this

20   December of 2020 non-disclosure agreement between CommScope

21   and TQ Delta that TQ Delta agreed that it would not use

22   correspondence and discussions between the parties to be

23   admissible in a trial. Correct?

24   A.   That's what it says. I -- you know, we're following

25   the -- the law, as I understand it.

1   Q.   And for the sake of completeness, you actually signed the

2   non-disclosure agreement on behalf of TQ Delta. Correct?

3   A.   I believe so, yes. Yes.

4   MR. DACUS: So, Mr. Carrillo, can you pull up

5   Exhibit 135-A, please?

6   Q.   (BY MR. DACUS) So this is the document that you and your

7   lawyer just spent by my calculation about 20 minutes talking

8   to the jury about. Correct?

9   A.   Yes.

10   MR. DACUS: So, Mr. Carrillo, can you scroll up to

11 the top, please? And can you highlight the very top heading

12 that says, Confidential, produced pursuant to NDA?

13   THE COURT: Counsel, approach the bench, please.

14   (The following was had outside the hearing of the

15   jury.)

16   THE COURT: As this examination is developing, it

17 seems to me, Mr. Dacus, that if you have a complaint that the

18 Plaintiff's exhibits, which it showed to the jury through the

19 witness on direct, were somehow in breach of a non-disclosure

20 agreement, you should have raised that as a basis for

21 objection to their admission when we had the pretrial hearing

22 and that this seems to me a little bit of an ambush that that

23 wasn't raised at the pretrial, and now you're trying to tell

24 the jury that somehow the Plaintiffs violated a contractual

25 agreement by showing to them what you didn't object to at

1   pretrial, and that's not proper.

2   MR. DACUS: Your Honor, we objected to these

3   exhibits at pretrial. They were admitted over our objection.

4   I'm not intending to say they breached it. It does go to the

5   credibility of the parties, though, which is always at issue.

6   We did object to these exhibits at pretrial.

7   THE COURT: On the basis of the NDA?

8   MR. DACUS: Yes, sir.

9   MR. DAVIS: Your Honor, we can check the record on

10   that. The basis of the objection is 408 --

11   MR. DACUS: That was part of it.

12   THE COURT: Well, I don't recall. Let's put it this

13   way. If the Defendant directly and unequivocally urged this

14   nondisclosure agreement as a basis to object to their

15   admission and told me at pretrial this is a breach of their

16   NDA agreement signed by Ms. Divine and that's why these

17   shouldn't be admitted before the jury, I have no recollection

18   of it.

19   MR. DACUS: I don't think it's with that degree of

20   specificity, Your Honor.

21   THE COURT: This does strike me as an ambush.

22   You've basically not raised this, kept this NDA in your back

23   pocket, and now after the Plaintiff's exhibits which have been

24   pre-admitted, have shown to the witness, you're trying to

25   basically show that -- show the jury that the witness somehow

1   breached this contractual agreement which you didn't raise at

2   pretrial, and that's not fair.

3   MR. DACUS: I would say, Your Honor, just in

4   response, I'll do whatever the Court tells me, of course.

5   THE COURT: I understand.

6   MR. DACUS: But the credibility of the parties and

7   the witnesses are always at issue. They entered into an

8   agreement that says, we won't take these offers and use them

9   in a lawsuit or a trial.

10   THE COURT: I understand what the document says. My

11   point is, procedurally, you didn't urge it for admission as an

12   exhibit. You haven't raised it previously. It's come out of

13   left field on cross examination right at the top of your cross

14   examination to attack this witness for allegedly breaching an

15   agreement that you haven't urged before, you haven't raised it

16   with the Court expressly in pretrial. It's an ambush, Mr.

17   Dacus.

18   MR. DACUS: I don't think we're -- I mean, candidly,

19   again --

20   THE COURT: It seems like it's been hidden.

21   MR. DACUS: We are not under any obligation to give

22   them our cross examination in advance. I mean, they know

23   about this agreement. She signed it. So we're under no

24   obligation to tell them, here's what we're going to

25   cross-examine her on.

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 1                 THE COURT:  I understand that with cross

 2    examination.  I'm talking about the use of this document which

 3    wasn't raised at pretrial as a, quote, refresher or to refresh

 4    her memory.  It seems to me to be a less than appropriate way

 5    to actually publish it and get it in front of the jury for the

 6    purpose of attacking her.

 7                 MR. DACUS:  Well, I'm not attacking her.

 8                 THE COURT:  Well, the company's credibility.

 9                 MR. DACUS:  The company's credibility, correct.  I

10    mean, that is the purpose.  I don't deny that at all.  The

11    credibility of the company is always at issue, particularly in

12    a breach of contract and breach of agreement case.

13                 THE COURT:  Let me say this.  We've gone down this

14    road as far as we're going to go.  I'm going to instruct you

15    to leave the non-disclosure agreement alone.  At this point I

16    don't intend to instruct the jury otherwise, but we're not

17    going to drill down any further on this or proceed with it any

18    further.

19                 MR. DACUS:  Understood.

20                 MR. DAVIS:  May I be heard on that, please?

21                 THE COURT:  You may be heard.

22                 MR. DAVIS:  Frankly, I don't know how we cannot

23    instruct the jury at this point.  If you don't, I have

24    to -- she has been called basically a promise breaker by Mr.

25    Dacus on cross on a document that wasn't even produced in
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1   litigation.

2   Sure, it's our document, but I don't see a Bates number

3   on this. We weren't aware of this at all. We had no notice

4   that they were going to make this argument. They've never

5   once raised this issue that using that is -- using the

6   settlement proposal that they made to us was a breach of

7   anything. They didn't raise it at the pretrial hearing.

8   If they had said anything about that being a breach of a

9   non-disclosure agreement, that would have been the time to

10   address it. But now, Mr. Dacus --

11   THE COURT: Well, that's why we're up here, Mr.

12   Davis.

13   MR. DAVIS: But the damage is done, Your Honor. He

14   has called her a promise breaker in front of the jury. He

15   said that she breached this agreement.

16   THE COURT: Just for purposes of discussion since

17   we're all here, what is it you would propose the Court do?

18   MR. DAVIS: I would propose that the Court instruct

19   the jury that this -- the use of this document was not proper

20   and that they should disregard the questions and the answers

21   and erase this testimony from their mind because it was not

22   used properly and it was in violation of the Court's rules for

23   procedure.

24   So that's what I'm going to have to do on cross and

25   redirect is get up and say CommScope -- this document, our

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 1    views of the settlement proposal is proper and appropriate

 2    because it's been admitted into evidence.

 3              THE COURT:  Mr. Dacus, what's your response?

 4         Just a minute, Mr. Davis.  Let Mr. Dacus respond.

 5              MR. DAVIS:  Yes, Your Honor.

 6              MR. DACUS:  There's nothing improper about this line

 7    of questioning, Your Honor.  They interjected these offers.

 8    It's a focus of their case.  They have an agreement that says,

 9    this is a case of much about credibility, it's been breach of

10    agreement and promise --

11              THE COURT:  I understand.  What I have the problem

12    with is they injected these documents as a proposed exhibit a

13    long time ago, and you sat there and never said they shouldn't

14    be able to use these because it violates this non-disclosure

15    agreement and here it is and here's where their corporate rep

16    signed it.

17         You've been silent on this until the middle of the trial,

18    right at the top of cross-examination, and I'm not saying this

19    is an intentional ambush, but I'm saying in every practical

20    sense, that's what it is.  And you've not raised this until

21    she went forward with exhibits that were pre-admitted with

22    this information in it weeks ago that you knew they were going

23    to lead with.

24              MR. DACUS:  I don't --

25              THE COURT:  Or you knew they were going to use
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1   during the trial.

2   MR. DACUS: I actually -- I'm not sure that the last

3   part of that's true that I knew they were going to. We did

4   object to them. But let me say this, Your Honor. And --

5   THE COURT: I assume you expected that Plaintiff was

6   going to put on the terms of its deals with these other

7   licensees.

8   MR. DACUS: Well, this is not with the other

9   licensees. This is -- and we're going to talk about that.

10   But this is the term of the deal with us. So what they're

11   saying is, you know, we -- we tried to negotiate with you,

12   CommScope, and you wouldn't negotiate with us. And they're

13   showing that to the jury. They agreed they wouldn't do that,

14   is exactly what they agreed they would not do.

15   We said, we won't give you any offers until you enter

16   into these NDAs. They did it, and they said, we won't use

17   them in the lawsuits, we won't use them in a trial. And

18   that's exactly what they just did.

19   On the ambush point, Your Honor, there's just nothing

20   that requires us to raise this before. If Your Honor

21   disagrees, you disagree. But there's nothing that requires

22   us. We objected to the admission of these exhibits at

23   pretrial. We had long, long discussions about them under 408

24   and otherwise. But you've not seen the non-disclosure.

25   So, Your Honor, we did apparently at the pretrial. And I

1   don't have vivid memory of it. We did raise the fact that

2   these are subject -- these offers are subject to an NDA where

3   they said there would be no use of them in settlement.

4   So we raised the issue about the NDA agreement at the

5   pretrial. I candidly didn't remember.

6   THE COURT: Well, it's probably because it was maybe

7   one sentence and there were certainly no here's the document

8   where they signed it, look at it. It was just a passing

9   statement.

10   MR. STEVENS: Your Honor, this document, this is

11   not --

12   THE COURT: I will consider your request for an

13   instruction, Mr. Davis, before you redirect.

14   MR. DAVIS: Thank you.

15   THE COURT: We need to get the examination back on

16   track.

17   MR. DACUS: Understood.

18   THE COURT: Let's go forward. You're not going to

19   go any further with this, Mr. Dacus.

20   MR. DACUS: Understood.

21   (The following was had in the presence and hearing

22   of the jury.)

23   THE COURT: All right. Let's proceed.

24   MR. DACUS: Thank you, Your Honor.

25   Q.   (BY MR. DAVIS) Ms. Divine, I'd like to make sure that I

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1    and the jury have a complete understanding of TQ Delta and

2    your role there.  So can I ask you some questions about that?

3    A.    Yes, of course.

4    Q.    Okay.  You told us that you are the founder and the

5    managing director of TQ Delta.  Correct?

6    A.    I am.

7    Q.    And I know from your deposition that you gave in this

8    case, you said being the managing director means that you're

9    the boss in control.  Correct?

10   A.    Yes.

11   Q.    Okay.  I think you said in your deposition that the buck

12   stops with you as to who's in charge at TQ Delta.  Is that

13   fair?

14   A.    I think that was how the question was phrased.

15   Q.    Okay.  And to sort of paint the picture for the jury,

16   there really are no employees at TQ Delta other than you.

17   Correct?

18   A.    That's correct.

19   Q.    Okay.  TQ Delta, to paint a further picture, doesn't make

20   or sell any products.  Correct?

21            MR. DAVIS:  Objection, Your Honor.  May we approach?

22   This has to do with one of your limine rulings.

23            THE COURT:  Approach the bench.

24            (The following was had outside the hearing of the

25            jury.)
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1   THE COURT: What's the objection, Mr. Davis?

2   MR. DAVIS: Your Honor, this would be our motion in

3   limine No. 2, TQ Delta not being a non-practicing -- I'm

4   sorry, being a non-practicing entity. I don't believe it's 2.

5   THE COURT: It's not.

6   MR. DAVIS: You have a standing order MIL on this

7   issue, and we discussed this extensively at the pretrial

8   hearing. We discussed it Friday before opening statements,

9   and you specifically in chambers told us that there

10 was -- that it can be said once. He said it in opening. He

11 said it in or he said it in voir dire, and now he is

12 apparently going right back into it.

13   THE COURT: So this is standing motion in limine No.

14 11.

15   MR. DACUS: Yes, Your Honor. So let's be clear. In

16 chambers, you told me I could say it in opening and I could

17 ask one question about it of the witness so that I have it in

18 evidence. That's all I'm doing.

19   THE COURT: You've done that.

20   MR. DACUS: Yes, sir. That's it.

21   THE COURT: And I'm not going to sustain the

22 objection, but we're not going further.

23   MR. DACUS: Of course.

24   THE COURT: Let's go.

25   (The following was had in the presence and hearing

1   of the jury.)

2   THE COURT: Objection's overruled. Let's proceed.

3   MR. DACUS: Thank you.

4   Q.   (BY MR. DACUS) I think you told us on your direct

5   examination that the asset that TQ Delta owns are these

6   patents that they bought from Aware. Correct?

7   A.   It's one of the assets, yes.

8   Q.   Okay. And with respect to those patents that TQ Delta

9   bought from Aware, you agree that there's an agreement with

10   the ITU that defines the terms on which you can license those

11   patents. Fair?

12   A.   I think there's an ITU RAND policy, yes.

13   Q.   And TQ Delta is subject to that policy. Correct?

14   A.   Yes.

15   Q.   You were here when the Judge read the preliminary

16   instructions to the jury. Right?

17   A.   Yes.

18   Q.   And you heard him say to the jury that the way it works

19   is when TQ Delta and Aware make a promise to the ITU,

20   CommScope is what we call a third-party beneficiary of that

21   promise. Correct?

22   A.   I -- I think so. I don't remember precisely, but yes.

23   Q.   Okay. You know that to be the case. Correct?

24   A.   Yes.

25   Q.   In other words, we're the one to receive the benefit of

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1    that promise that you won't license us on different terms than

2    you license other people.  Correct?

3    A.    I think that it requires willing licensees.

4    Q.    Okay.

5              MR. DACUS:  Can we pull up Exhibit 68?  And can you

6    go to -- I think it's PDF page 190, Mr. Carrillo.  Can you

7    blow that up a bit?

8    Q.    (BY MR. DACUS)  So what we're looking at here, Ms.

9    Divine, is the promise in the agreement that Aware made

10   related to its patents in the ITU.  Correct?

11   A.    I believe so, yes.

12   Q.    And can you -- so you see at the top, it says Patent

13   Statement and Licensing Declaration?

14   A.    Yes.

15   Q.    Okay.  And you know that when TQ Delta bought these

16   patents, they bought them subject to the promises that Aware

17   had made to the ITU.  Correct?

18   A.    Yes.

19   Q.    When I say subject to, you--TQ Delta--had to comply with

20   these promises that Aware made.  Fair?

21   A.    That's my understanding.

22   Q.    Okay.

23             MR. DACUS:  Now, can you scroll down to paragraph 2,

24   Mr. Carrillo?  Where the X is, can you highlight that?

25   Q.    (BY MR. DACUS)  So the promise that Aware had made is
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1   that the patent holder, that's the patent owner, is to grant

2   on the basis of reciprocity for the above recommendation a

3   license to an unrestricted number of applicants on a

4   worldwide, non-discriminatory basis and on reasonable terms

5   and conditions. Correct?

6   A.   That is what it says.

7   Q.   Okay. So there's four parts to that. First of all, you

8   have to license to an unrestricted number of applicants.

9   Correct?

10   A.   That is correct.

11   Q.   You have to license on a worldwide basis. Correct?

12   A.   Yes.

13   Q.   You have to license on a non-discriminatory basis.

14   Correct?

15   A.   That is correct. That's what it says.

16   Q.   And when you say that, it means you cannot discriminate

17   among companies in the industry on any basis. You agree with

18   that?

19   A.   I would not agree with that.

20   Q.   You would not agree with that. That's what the agreement

21   says. Correct?

22   A.   That is not what it says.

23   Q.   It says non-discriminatory basis. Is that correct?

24   A.   It does say that.

25   Q.   So is it your contention in this lawsuit that there are

1   some bases on which TQ Delta can discriminate?

2   A.   It says non-discriminatory basis, which means that

3   companies that are -- you can't advantage one company over

4   another in like situations.

5   Q.   You agree that you cannot advantage one company over

6   another. Correct?

7   A.   Similarly-situated companies.

8   Q.   Where does it say all that in here, all this

9   similarly-situated? Where is that in the contract? Can you

10   show me that language?

11   A.   Well, this is -- I've been in the industry for a very

12   long time. It's a very common understanding.

13   Q.   What the contract -- do you agree that when we're talking

14   about a breach of an agreement or a contract, that we should

15   look to the agreement and the contract to determine what the

16   promise in the agreement was?

17   A.   Certainly. But these terms are not defined here, so I'm

18   helping to explain how the industry defines them.

19   Q.   You know what non-discriminatory means. Correct?

20   A.   In the context of patent licensing standard essential

21   patents, it generally means, as I said, similarly-situated

22   companies are to be afforded similar or non-discriminatory

23   terms.

24   MR. DACUS: May I have the document camera?

25   Q.   (BY MR. DACUS) Were you here for the opening that your

1   lawyer gave to the jury?

2   A.   I was.

3   Q.   And did you hear him say that what the obligation is for

4   non-discriminatory, is to treat the companies fair and

5   consistent? Do you agree with that or disagree?

6   A.   I would agree with that in the case of companies that are

7   similarly-situated.

8   Q.   You have to treat companies in the industry fairly and

9   consistently. Correct?

10   A.   Fairly and consistently for the products and services

11   that they offer.

12   Q.   Okay.

13   MR. DACUS: Can we pull that back up, Mr. Carrillo?

14   Q.   (BY MR. DACUS) Now, you understand that this RAND

15   agreement, it's an important part of participating in the ITU.

16   Correct?

17   A.   I would say so, yes.

18   Q.   It's so important --

19   MR. DACUS: Can we pull up Exhibit 86, Mr. Carrillo?

20   Q.   (BY MR. DACUS) It's so important that the ITU actually

21   has separate guidelines for how to implement that promise.

22   True?

23   A.   That's true.

24   Q.   So what you're looking at are those separate guidelines,

25   Exhibit 86 in the case. Have you seen those before?

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1    A.    I have.

2    Q.    Have you studied them?

3    A.    I have before.

4    Q.    Okay.  Do you remember that there are about 10 pages

5    long?  Right?

6    A.    I don't remember with precision.

7              MR. DACUS:  So can you go to the first page of

8    Exhibit 86, Mr. Carrillo?  Actually, it's the one

9    that's -- has the little Roman I -- there you go.

10   Q.    (BY MR. DACUS)  You agree that the ITU says, The

11   guidelines for implementation of the common patent policy are

12   intended to clarify and facilitate implementation of the

13   patent policy.  Correct?

14   A.    That's what it says.

15   Q.    And so you can find these rules that say, you can go to

16   our website and find them.  Right?

17   A.    I believe that's true, yes.

18   Q.    And the whole purpose of these rules --

19             MR. DACUS:  If you'll highlight the very last

20   sentence, Mr. Carrillo.

21   Q.    (BY MR. DACUS)  The whole purpose of this promise that's

22   made to the ITU is so that greater efficiencies and standards

23   development is possible and potential patent rights problems

24   can be avoided.  Correct?

25   A.    That's correct.
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 1                    MR. DACUS:  If you would go to what is page 2, Mr.

 2       Carrillo, and highlight paragraph 3.1.  Well, it's paragraph

 3       3, the first sentence.

 4       Q.    (BY MR. DACUS)  So this promise to the ITU is important

 5       enough that the ITU says that any party participating in the

 6       ITU from the outset, at the very beginning, needs to draw

 7       attention to any known patent or to any known patent pending

 8       application, either of their own or anyone else in the

 9       organization.  Correct?

10       A.    That is -- that's what it says right there.

11       Q.    Okay.  So it's important enough that you need to tell

12       them about your own patents or if you know of someone else who

13       has patents you need to tell them about.  Correct?

14       A.    That's what it says in this sentence, yes.

15       Q.    And you agree with that, do you not?

16       A.    I do, but there's more context.

17       Q.    Okay.

18                    MR. DACUS:  Well, let's turn to page 9, Mr.

19       Carrillo, if you could, please.

20       Q.    (BY MR. DACUS)  The ITU feels so strongly about this that

21       they actually have what they call a code of practice.

22       Correct?

23       A.    Yes.

24       Q.    And so it says, the following is a code of practice

25       regarding patents covering in varying degrees the subject
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1 matters of ITU recommendations. Do you see that?

2 A.   That is what it says, yes.

3 Q.   And you're familiar with this code of practice. Correct?

4 A.   I've reviewed it, yes.

5 Q.   Well, does reviewing it mean that you're actually -- you

6 committed it to your memory and that you're very -- that you

7 studied it, or you just reviewed it?

8 A.   I studied it. I don't think I committed it to memory.

9 Q.   Okay. But you understand that it's important for you to

10 understand these rules because TQ Delta is bound by these

11 rules when they go out and try to license other companies.

12 Correct?

13 A.   Yes, and I believe we do.

14 Q.   Okay. Right here it says, the rules of the code of

15 practice are simple and straightforward. Correct?

16 A.   That's what it says.

17 Q.   Those rules are, you can't discriminate on any basis and

18 you have to give reasonable terms and conditions. That's what

19 the agreement said. Correct?

20 A.   I'm not sure that I can agree with that.

21 Q.   Okay. There's a very good reason why these rules are

22 important. Do you agree with that?

23 A.   I'm not sure I understand your question.

24 Q.   Okay. The ITU says, "It follows, therefore, that a

25 patent embodied fully or partly in a recommendation must be

1   accessible to everybody without due constraints."

2   Do you see that?

3   A.   Yes, I see that sentence, yes.

4   Q.   So it's a very, very important part of this ITU policy,

5   isn't it, Ms. Divine?

6   A.   It's part of the policy, yes. It's part of the document.

7   Q.   The reason it's important is the ITU does not want

8   companies that make contributions to the standard who have a

9   patent to show up years later and demand unreasonable amounts

10   of money from companies that might implement those standards.

11   Isn't that true?

12   A.   I'm not sure I fully understand your question.

13   Q.   So what the ITU is concerned with is it's going to adopt

14   standards and those standards hopefully are going to be used

15   by many different companies who implement those standards and

16   also by consumers who use them. True?

17   A.   I believe, yes, the standards process is intended.

18   Q.   And so the risk here is that if someone like Aware

19   contributes an idea to the standard and they have a patent on

20   it, that they show up years later after people who make

21   equipment start implementing the standard and say, hey, you

22   owe us a bunch of money for implementing the standard because

23   it infringes our patent. That's what the ITU was worried

24   about. Right?

25   A.   No, I wouldn't agree with that.

1   Q.   You don't think that's the purpose of the ITU policy on

2   RAND?

3   A.   I don't agree.

4   Q.   So you think it's okay for companies that contribute a

5   patent to the ITU to show up years later and demand

6   unreasonable amounts of money?

7   A.   I didn't say that. I said that patent owners, companies

8   that own patents and inventions, have -- it calls for

9   reasonable.

10   Q.   So when the ITU says in its code of practice that the

11   primary reason is so that the standards are accessible to

12   everybody without undue constraints, you don't interpret that

13   to mean we don't want folks who contribute recommendations to

14   the standard not to show up later and demand unreasonable

15   amounts of money. You don't think that's the purpose?

16   A.   I disagree with that characterization. That's not what I

17   said.

18   MR. DACUS: Can you go to page 9, please, Mr.

19   Carrillo?

20   Q.   (BY MR. DACUS) You do know, Ms. Divine, that this

21   promise in this agreement is so important to the ITU that, if

22   a company like Aware refuses to make the promise, then the ITU

23   does not allow them to make any recommendations for the

24   standard. Do you understand that?

25   A.   I'm not sure that I would fully agree with that.

1   MR. DACUS: Can you blow up paragraph 2.3, Mr.

2   Carrillo?

3   Q.   (BY MR. DACUS) So this is the ITU's document. Right?

4   A.   Yes.

5   Q.   This is their guidelines that they put out to anyone who

6   wants to participate in the standard-setting body. Correct?

7   A.   Yes.

8   Q.   And so what it says, if you, the patent holder, are not

9   willing to comply with the provisions of either paragraph 2.1

10   or 2.2 -- and so we're clear, those two paragraphs require you

11   to accept a reasonable royalty. Right?

12   A.   Yes, as I recall.

13   Q.   The recommendation shall not include provisions depending

14   on the patent. Correct?

15   A.   Correct.

16   Q.   So, in other words, let's be really clear here. The ITU

17   is saying to members like Aware, like TQ Delta, if you don't

18   agree to this RAND provision, the non-discriminatory

19   provision, then we're not going accept any of your

20   recommendations or your contributions to the standard. That's

21   what this says. Correct?

22   A.   That is -- yes, that's what it says here.

23   Q.   So that would indicate to me that this is a pretty

24   important promise. Do you agree?

25   A.   I would agree.

1   Q.   Okay. Now --

2   MR. DACUS: We can pull that down, Mr. Carrillo.

3   Q.   (BY MR. DACUS) I thought I heard you say something a

4   second ago, something about the licensee like CommScope has

5   some sort of obligations under this agreement that Aware and

6   TQ Delta made with the ITU. Did I understand that correctly?

7   A.   I think you're referring to willing licensee.

8   Q.   That's right. You said willing licensee. Is that some

9   sort of obligation that you believe CommScope has?

10   A.   I do, yes.

11   Q.   So in those 10 pages of guidelines, can you point us to

12   anywhere in there where it says anything about willing

13   licensee or what CommScope's obligations are?

14   A.   Well, that's my understanding in the practice. It's

15   impossible to negotiate a license with someone who's

16   unwilling.

17   MR. DACUS: Your Honor, I object to non-responsive.

18   THE COURT: Overruled.

19   Q.   (BY MR. DACUS) So in these guidelines, Exhibit 86, that

20   govern the ITU promise, can you show us anywhere in these

21   guidelines where it says that the licensee has some sort of

22   obligation?

23   A.   I believe it's practically implied.

24   Q.   Implied. Is that what you said?

25   A.   Yes. Again, can't license with someone who's unwilling.

1   Q.   So that means you cannot show us anywhere in here. Is

2   that true?

3   A.   As I said, I haven't memorized the document, so I don't

4   know.

5   Q.   Would you agree that one primary purpose of this RAND

6   promise is so that companies in an industry are not

7   competitively disadvantaged against each other?

8   A.   I think generally speaking, yes. Similarly-situated

9   companies are, as I said, to have a non-discriminatory basis.

10   Q.   Right. And one way that companies could be competitively

11   disadvantaged is if one company had to pay a much higher

12   royalty for a patent than another company in the industry.

13   Correct?

14   A.   Again, I think it's based on context.

15   Q.   All I'm asking is, that's one way a company could be

16   competitively disadvantaged--by being forced to pay a much

17   higher royalty for a patent than another company in the same

18   industry. Correct?

19   A.   Again, I think it depends on the context.

20   Q.   Well, let's talk about the context of this industry. You

21   know that this industry, that being CPEs, is a very

22   competitive industry. Correct?

23   A.   I think there are competitors in the industry, yes.

24   Q.   And people compete very vigorously on price for these

25   products. Correct?

1   A.   I guess so.

2   Q.   And you know there are companies in this industry who are

3   from Asia. Correct?

4   A.   I think there are companies from all over.

5   Q.   Well, you know -- let's -- you mentioned Zhone. Your

6   lawyer showed a license that TQ Delta's entered into with

7   Zhone. Correct?

8   A.   Yes.

9   Q.   You know they're an Asian company. Correct?

10   MR. DAVIS: Your Honor, may I approach? This has to

11   do with a motion in limine.

12   THE COURT: Approach the bench.

13   (The following was had outside the hearing of the

14   jury.)

15   MR. DAVIS: Your Honor, this is the third time that

16   Mr. Dacus has referred to one of our licensees as an Asian

17   company. I don't know why he's continuing to do that or what

18   relevance it has to this case, but he seems to be suggesting

19   to the jury that there's something wrong with the license

20   because they're an Asian company.

21   THE COURT: What is the relevance of this, Mr.

22   Dacus?

23   MR. DACUS: It's a competitive industry and the fact

24   that they're charging us a higher rate than they're charging

25   the other licensees. All I'm trying to prove up --

1   THE COURT: Whether they're from Asia or Mars has no

2   bearing on that issue at least within the context of what

3   you've asked so far.

4   MR. DACUS: Okay.

5   THE COURT: I'll sustain the objection. Don't refer

6   to parties or entities by their geographic location as Asian,

7   European, South American, or anything else like that without

8   prior approval. Okay?

9   MR. DACUS: Yes, Your Honor.

10   THE COURT: Okay.

11   MR. DACUS: Thank you.

12   (The following was had in the presence and hearing

13   of the jury.)

14   THE COURT: Sustained. Let's proceed.

15   Q.   (BY MR. DACUS) So you agree, Ms. Divine, that this is a

16   competitive industry. Correct?

17   A.   I -- I guess so, yes.

18   Q.   Okay. By the way, one of these pieces of equipment, one

19   of these CPEs, do you know about what they cost?

20   A.   I have not priced them recently, so, no, I don't. We did

21   not get that kind of information.

22   Q.   So can you -- you saw me show this in opening. Correct,

23   Ms. Divine?

24   A.   In your opening, yes.

25   Q.   Right. So this is the CPE that's at issue. Right?

1   A.   That's correct.

2   Q.   You can't tell us whether that costs -- you can't tell us

3   what the cost of one of those is?

4   A.   As I said, we've asked for sales information. We just

5   never got it.

6   Q.   Well, have you -- you can get the price of one of these

7   just by going out and trying to buy one, can you not?

8   A.   I suppose you could.

9   Q.   I mean, don't you need to know in order to know whether

10   or not what you're asking for is a reasonable amount of money,

11   don't you need to know how much one of these costs?

12   A.   Not necessarily.

13   Q.   Okay. Well, you were here when I said in the opening,

14   and you know it's true, that the patented features that are

15   actually at issue here all are allegedly contained on a

16   semiconductor chip. Correct?

17   A.   I would not agree with that characterization.

18   Q.   Okay. You would agree at least that some of the features

19   and functions of these patents are contained on a

20   semiconductor chip. Correct?

21   A.   I would agree that a semiconductor chip is part of the

22   system.

23   Q.   Okay. Do you have any idea what a semiconductor chip

24   costs?

25   A.   They vary somewhat.

1   Q.   Can you give us a range?

2   A.   No, I cannot.

3   Q.   You do know that the semiconductor chips that CommScope

4   puts in its products, it buys from Broadcom. Correct?

5   A.   That's what I understand.

6   Q.   By the way, do you have any idea what the profit is on

7   one of these accused products?

8   A.   No, I do not.

9   Q.   You would at least agree that it's small. Correct?

10   MR. DAVIS: Your Honor, I need to approach again

11   regarding one of your motion in limine rulings.

12   THE COURT: Approach the bench.

13   (The following was had outside the hearing of the

14   jury.)

15   MR. DAVIS: I'm not sure where Mr. Dacus is going

16   with the issue of profit margins and that this is going to

17   hurt the consumer if there is --

18   THE COURT: He hasn't gone there yet, Mr. Davis.

19   And, you know, these repeated trips to the bench are --

20   MR. DAVIS: I understand, Your Honor.

21   THE COURT: -- are disconcerting to the jury, and

22   they don't help the process.

23   MR. DAVIS: I understand.

24   THE COURT: This is premature. He hasn't violated

25   the MIL. It's overruled.

1   MR. DAVIS: Thank you, Your Honor.

2   (The following was had in the presence and hearing

3   of the jury.)

4   THE COURT: Let's proceed.

5   MR. DACUS: Thank you, Your Honor.

6   Q.   (BY MR. DACUS) So you don't have any idea -- TQ Delta,

7   as a company that's here requesting $89 million from

8   CommScope, you don't have any idea how much profit is made on

9   this product. Is that a true statement, ma'am?

10   A.   That's correct.

11   MR. DACUS: We can take that down, Ms. Brunson.

12   Q.   (BY MR. DACUS) Don't you think that's a piece of

13   information that you need in order to determine if the amount

14   of royalty that you're seeking is reasonable?

15   A.   Not necessarily.

16   Q.   Now, when TQ Delta bought these patents from Aware, you

17   knew -- TQ Delta knew that Aware already had a couple of

18   licenses related to the patents that you were buying.

19   Correct?

20   A.   Yes.

21   MR. DACUS: Can you pull up Exhibit 81, Mr.

22   Carrillo, and if you could go to page -- first of all, let's

23   show the first page.

24   Q.   (BY MR. DACUS) This is the document that Aware was

25   presenting to potential purchasers of those patents. Correct?

1   A.   Yes.

2   Q.   And TQ Delta was a potential purchaser. Correct?

3   A.   That's correct.

4   Q.   So you saw this document. Correct?

5   A.   Yes, I did.

6   MR. DACUS: Can you turn to page 114, Mr. Carrillo?

7   Q.   (BY MR. DACUS) So within that document, they told you be

8   aware because -- no pun intended, but be aware because there

9   are FRAND license obligations related to these patents that

10   you're going to buy. Correct?

11   A.   They did explain that, yes.

12   Q.   They felt that was important enough to tell you in the

13   document that they were submitting to potential purchasers.

14   Correct?

15   A.   It's one of the pieces of information that they shared,

16   yes.

17   Q.   And they said, we participated in the ITU and there's

18   this FRAND promise or obligation that we made to the ITU.

19   Correct?

20   A.   That is what it says.

21   Q.   And they went further and said, Aware has already entered

22   into existing licenses. Correct?

23   A.   Yes.

24   Q.   In fact, Aware has two active licenses. Correct?

25   A.   That is what they shared.

1   Q.   Now, what you told the jury a minute ago was, no, those

2   are joint development agreements. That's what you said.

3   Right?

4   A.   I did.

5   Q.   What did the people who actually knew, like Aware, what

6   did they say? Did they call them a license or a joint

7   development agreement?

8   A.   Here they called them a license.

9   Q.   And the reason they drew your attention to those licenses

10   is because since there's a RAND obligation, the RAND terms and

11   rates have now been set. Correct?

12   A.   I can't agree with that.

13   Q.   Okay. At least Aware believed that it was important

14   enough to tell you, hey, we have these licenses out here, we

15   have a RAND obligation, so whatever terms we've already

16   licensed on, you're going to be stuck with those. That's what

17   they were telling you.

18   A.   I disagree.

19   Q.   Okay. And, of course, the reason you disagree is

20   because, if you agree, that means you breached the agreement.

21   Right?

22   A.   That's not the reason I disagree.

23   Q.   Okay. Now --

24   MR. DACUS: We can take that down, Mr. Carrillo.

25   Q.   (BY MR. DACUS) You knew at the time -- I say you--TQ

1   Delta--knew at the time that it purchased these patents, that

2   DSL use was actually declining. Correct?

3   A.   That's not my understanding.

4   Q.   Okay. You knew that, in fact, Aware had been unable to

5   generate any significant income or revenue from its patents

6   related to DSL. Correct?

7   A.   I believe that that was what they said.

8   Q.   Right. So to sort of paint the picture --

9   A.   In recent years. I'm sorry.

10   Q.   I'm sorry?

11   A.   In recent years.

12   Q.   So Aware, here they said what these patents related to

13   DSL?

14   A.   Yes.

15   Q.   And to set the stage, Aware is a very sophisticated

16   company. Correct?

17   A.   Yeah. They were a -- they were an early innovator in the

18   space.

19   Q.   Publicly traded company on a stock exchange. Correct?

20   A.   I believe they were.

21   Q.   And when I say stock exchange, I mean like the New York

22   Stock Exchange. Right?

23   A.   I'm not sure if it was that one. I just don't remember.

24   But, yes.

25   Q.   Okay. So we're not talking about mom-and-pop shop down

1   here on the corner at Marshall. We are talking about a

2   sophisticated company publicly traded. Correct?

3   A.   They were publicly traded, yes.

4   Q.   Here they sit with these DSL patents, and they are unable

5   to generate any money or income from those patents other than

6   those two licenses. Correct?

7   A.   I think that mischaracterizes what they were intending to

8   do.

9   Q.   Well, you remember in the opening when I showed the form

10   10-K reporting for Aware? Do you remember that?

11   A.   I do.

12   Q.   You know that Aware, because they are a public company,

13   they had to file these things with the Securities & Exchange

14   Commission. Correct?

15   A.   Right.

16   Q.   And they said, While we have continued to enhance and

17   develop our patent portfolio over the past three years, patent

18   licensing revenue during the last three years was limited to

19   an insignificant amount of revenue as of December 31, 2010.

20   You remember that. Right?

21   A.   Yes, I do remember that.

22   Q.   And you know that to be true. Correct?

23   A.   I -- yes.

24   Q.   So just so we're clear, TQ Delta decided to go buy these

25   DSL patents, patents that Aware, a sophisticated company, had

1   attempted to license and had been unsuccessful in doing so.

2   Correct?

3   A.   That was not my understanding.

4   Q.   Well, that's what they reported to the Securities &

5   Exchange Commission. Correct?

6   A.   They didn't -- I don't believe they reported that they

7   had been out trying to license. But, yes, they reported they

8   did not have much licensing revenue.

9   Q.   Okay. One of those licenses that Aware had entered into

10 was with a company called Infineon. Correct?

11 A.   Yes.

12   MR. DACUS: And can you pull up Exhibit 65-B, Mr.

13 Carrillo?

14 Q.   (BY MR. DACUS) And I assume you are familiar with this

15 Infineon agreement?

16   THE COURT: Counsel, approach the bench, please.

17   (The following was had outside the hearing of the

18   jury.)

19   THE COURT: We are having some technical

20 difficulties with the IT.

21   The witness can say she understood she was permitted to

22 tell the jury what the back and forth was between the parties

23 so the jury could be in a posture to decide who was and was

24 not acting fairly and reasonably. And there will be no more,

25 and you are not to revisit it any further, Mr. Dacus.

1   MR. DACUS: Understood.

2   (The following was had in the presence and hearing

3   of the jury.)

4   THE COURT: We may be having some technical

5   difficulties, ladies and gentlemen. So just bear with us a

6   minute.

7   I tell you what we're going to do. Members of the jury,

8   we're going to take a short recess. If you will, simply close

9   your notebooks and leave them in your chairs, follow all the

10   instructions I have given you about your conduct during the

11   trial, including not to discuss the case with each other, and

12   we'll be back in a short period of time to continue with the

13   Defendants' cross-examination of Ms. Divine and hopefully this

14   small glitch in the IT stuff will be worked out.

15   The jury's excused for recess.

16   (Whereupon, the jury left the courtroom.)

17   THE COURT: All right. Court stands in recess.

18   (Brief recess.)

19   THE COURT: Be seated, please.

20   All right. Are you ready to continue with

21   cross-examination, Mr. Dacus?

22   MR. DACUS: Yes, Your Honor.

23   THE COURT: Let's bring in the jury, please.

24   (Whereupon, the jury entered the courtroom.)

25   THE COURT: Welcome back, ladies and gentlemen.

1   Please be seated. I think we have everything in good working

2   order so we'll continue with cross-examination of the witness

3   by the Defendants.

4   Mr. Dacus, you may proceed.

5   MR. DACUS: Thank you, Your Honor.

6   Q.   (BY MR. DACUS) You understand in this lawsuit, Ms.

7   Divine, that CommScope says that you have violated your RAND

8   agreement. Do you understand that?

9   A.   I understand that's what CommScope is saying.

10   Q.   Yes, ma'am. And you understand that we say that because

11   we believe, in part, you have discriminated against us versus

12   other companies in the industry. You understand that?

13   A.   If that's your argument, yes.

14   Q.   Okay. And as you said earlier, you admit that the RAND

15   obligation requires you not to advantage one company in the

16   industry over another. Correct?

17   A.   I think I said similarly-situated.

18   Q.   Right. And your lawyer said in opening that means you

19   have to treat companies consistently. Correct?

20   A.   That is what he said.

21   Q.   Okay.

22   MR. DACUS: Your Honor, may I approach the flip

23   chart and pull it up?

24   THE COURT: You may.

25   MR. DACUS: Thank you.

1   If I keep my voice up, may I have permission --

2   THE COURT: If you speak up, you can use it from

3   there.

4   MR. DACUS: Thank you, Your Honor.

5   Q.   (BY MR. DACUS) So what I would like to do, Ms. Divine,

6   is to make a chart that compares what TQ Delta is seeking in

7   this lawsuit versus what it has required of other companies in

8   the industry for a license. Does that sound fair?

9   A.   I'm happy to help.

10   Q.   And I'd like to try to put it on one page so that we'll

11   all kind of have it in front of us and we can determine

12   whether or not what you're doing --

13   THE COURT: Okay. Let's don't tell everybody what

14   it is. Let's just ask questions.

15   MR. DACUS: Understood.

16   Q.   (BY MR. DACUS) So what you seek here are monies from

17   CommScope. Correct?

18   A.   Yes.

19   Q.   So I've abbreviated that as CS on our chart. Okay?

20   A.   Okay.

21   Q.   And my understanding is that what you-all seek is $89

22   million. Is that true?

23   A.   I think approximately.

24   Q.   And that's for seven patents that are at issue in this

25   lawsuit. Correct?

1   A.   That is for the seven patents in this case, yes.

2   Q.   And what the jury's going to decide is what amount of

3   money should be paid for a license for the U.S. only.

4   Correct?

5   A.   Yes.

6   Q.   In other words, it could be a license for worldwide or

7   U.S., as you've previously said, but here the jury's only

8   determining U.S. You agree with that.

9   A.   I agree with that.

10   Q.   And the number of units involved, I think your lawyer

11   said, are 38 million. I think that's what he said in opening.

12   Is that true?

13   A.   No, I don't think so.

14   Q.   Okay. How many -- how many is it?

15   A.   I think it was approximately 36 million.

16   Q.   Okay. I stand corrected. So it is true that Aware, when

17   they owned the agreement -- when they owned the patents, I'm

18   sorry, they entered into a license agreement with a company

19   called Infineon. Correct?

20   A.   They had a joint development agreement with Infineon.

21   MR. DACUS: Well, can you pull up Exhibit 65-B, Mr.

22   Carrillo? And can you highlight the very first word at the

23   top?

24   Q.   (BY MR. DACUS) That says license agreement, does it not?

25   A.   It does.

1   Q.   Okay. And if we read the parties, it involves Infineon

2   Technologies. Correct?

3   A.   Yes.

4   Q.   And Aware. Correct?

5   A.   Yes.

6   Q.   The agreement is October 1st of 2007. Correct? Do you

7   know that?

8   A.   I do not know that.

9   Q.   Okay.

10   MR. DACUS: Can we go to page 19, Mr. Carrillo? And

11   can you highlight paragraph 9.1?

12   Q.   (BY MR. DACUS) Do you see that the date of the agreement

13   is October 1st of 2007?

14   A.   Yes. That's the effective date.

15   Q.   When you said -- when you were talking about agreements

16   back to 1998, at least the Infineon agreement was as of

17   October 1st of 2007. Correct?

18   A.   Yes. This agreement says 2007.

19   Q.   Okay. You agree that Infineon agreed to pay Aware

20   royalties related to the Aware patents. Correct?

21   A.   I'm not -- I don't think I've seen this agreement, so --

22   but --

23   Q.   Let's stop here. You've never seen this agreement?

24   A.   Not in unredacted form.

25   Q.   So TQ Delta and your obligation, at least from our

```
1    perspective, is to offer similar terms and rates that Aware

2    did to Infineon.  You understand that?

3    A.   I understand that's your position.  I would disagree with

4    it.

5    Q.   So even though Aware told you, when they sold these

6    patents to you, hey, we have this agreement out there with

7    Infineon and there's a RAND obligation and you need to be

8    cognizant and aware of it, you think this agreement's just

9    irrelevant to your RAND obligation?

10   A.   I think that mischaracterizes what I said.

11   Q.   I mean, it's true that under your RAND obligation, once

12   Aware signed this agreement, that set the rates and terms.

13   Correct?

14   A.   I cannot agree with that.

15   Q.   If the jury decides that, in fact, that is the terms and

16   conditions under which TQ Delta should be licensing, then they

17   need to know what these terms were.  Correct?

18   A.   I'm not sure I understand your question.

19             MR. DACUS:  Can you pull up -- can you go to

20   appendix B, Mr. Carrillo?  And can you blow up the bottom half

21   of it, please?

22   Q.   (BY MR. DACUS)  So the royalties that Aware charged and

23   that Infineon agreed to pay were a percentage of a sales

24   price.  Correct?

25   A.   Of a -- that appears to be what it says.
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1   Q.   Okay. And you know that sales price they were talking

2   about is the sales price of the semiconductor chip. You

3   understand that?

4   A.   I believe so.

5   Q.   Okay. And what they agreed on was --

6   THE COURT: Counsel, excuse me. Approach the bench

7   briefly, please.

8   (The following was had outside the hearing of the

9   jury.)

10   THE COURT: Are all these prior financial

11   disclosures coming in without the courtroom being sealed? Are

12   we going to talk about what everybody paid and agreed to pay

13   under all these licenses on open record?

14   MR. DAVIS: I think we should probably seal the

15   courtroom, Your Honor. These are not our agreements. These

16   are produced by a third party, but I do think we should sealed

17   them. So they should be sealed.

18   THE COURT: Well, I mean, it's not my job to

19   determine what should or shouldn't be sealed. I just don't

20   want to be inundated later with why did all this come into the

21   public record and then people are going to be asking for

22   copies, it's going to go all kinds of places.

23   MR. DACUS: I've not been told that it needs to be

24   sealed, but I may be uninformed.

25   THE COURT: I'm not trying to do anything other than

1   anticipate a potential problem.

2   MR. DAVIS: These were produced by a third party,

3   Your Honor, and I believe that --

4   THE COURT: I'll leave it with you-all. I'm just

5   going to say this: If something needs to be sealed, it's up

6   to you-all to raise it.

7   MR. DAVIS: No. I think we need to.

8   THE COURT: All right. Thank you.

9   MR. DAVIS: Thank you.

10   (The following was had in the presence and hearing

11   of the jury.)

12   THE COURT: All right. Thank you for that

13   clarification, counsel. Let's continue.

14   MR. DACUS: Thank you, Your Honor.

15   MR. DAVIS: Your Honor, before we proceed, may I

16   request that the courtroom be sealed as the information in

17   these documents relates to a third party not at issue in this

18   lawsuit and to avoid it becoming public.

19   THE COURT: Any objection to that, Mr. Dacus?

20   MR. DACUS: No, Your Honor.

21   THE COURT: All right. Based on Plaintiff's

22   counsel's request, I'll order the courtroom sealed. That

23   means anyone present who is not subject to the protective

24   order that's been entered in this case should excuse

25   themselves and remain outside the courtroom until the

1   courtroom is reopened and unsealed.

2   If you're in the gallery and you're not subject to the

3   protective order, you'll need to exit the courtroom until it's

4   reopened.

5   (Courtroom sealed.)

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17   (Courtroom unsealed.)

18   THE COURT: With that, we're going to recess for

19   lunch, ladies and gentlemen. I'm going to ask you to take

20   your notebooks with you to the jury room. Ms. Clendening's

21   advised me that your lunch should be there waiting on you.

22   We'll try to reconvene shortly before 1:00 p.m. Please

23   follow all my instructions, including not to discuss any of

24   the evidence or anything you've heard during the trial so far

25   among each other.

1   With that, the jury's excused for lunch.

2   (Whereupon, the jury left the courtroom.)

3   THE COURT: Court stands in recess.

4   (Lunch recess.)

5   THE COURT: Be seated, please.

6   Mr. Davis, are you prepared to proceed with redirect

7   examination?

8   MR. DAVIS: I am, Your Honor.

9   THE COURT: All right. You may go to the podium.

10   While he's doing that, bring in the jury, please, Mr.

11   Turner.

12   (Whereupon, the jury entered the courtroom.)

13   THE COURT: Please be seated, ladies and gentlemen.

14   Welcome back from lunch. We will proceed with redirect

15   examination of the witness by Plaintiff's counsel.

16   Mr. Davis, you may proceed.

17   MR. DAVIS: Thank you, Your Honor.

18   REDIRECT EXAMINATION

19   BY MR. DAVIS:

20   Q.   Ms. Divine, what are standard essential patents?

21   A.   So standard essential patents are those patents that are

22   related to -- have been incorporated into the standard, and so

23   in order to practice the standard, you have to use those

24   patents.

25   Q.   And what ITU licensing commitments attach to standard

1   essential patents?

2   A.   So the ITU commitment is to agree to negotiate a

3   reasonable and non-discriminatory license with willing

4   licensees.

5   Q.   Okay. And I think you were asked on cross-examination

6   where it says the word 'willing' in the patent policy.

7   MR. DAVIS: Mr. Diaz, can I please have Exhibit 86,

8   please? And I'm sorry. I meant to say 68. Could I please

9   have 68? And if you could go --

10   Q.   (BY MR. DAVIS) Well, first of all, Ms. Divine, what is

11   Exhibit 68?

12   A.   So this is one of the patent statement and licensing

13   declarations that we have submitted.

14   Q.   Okay. And over the years, either for TQ Delta or its

15   predecessor Aware, do you have any idea how many of these

16   patent licensing and declaration statements have been

17   submitted for your portfolio?

18   A.   I'm not sure. It's -- it's dozens.

19   Q.   Okay. And, again, what is the purpose of submitting

20   these?

21   A.   They are to -- they are a declaration that the standard

22   that's about to be established is -- has -- you have -- the

23   patent owner who's filing it has patents that potentially

24   relate to that standard.

25   MR. DAVIS: Can we have the next page, please, Mr.

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1    Diaz?  And if you could highlight or blow up -- I'm sorry,

2    blow up the enlarged paragraph 2.

3    Q.   (BY MR. DAVIS)  And I'd like to draw your attention, Ms.

4    Divine to this word right here, unrestricted number of

5    applicants.  What is an applicant?

6    A.   An applicant is a willing licensee, somebody who comes to

7    you for a license.

8    Q.   And in your view, has CommScope ever been an applicant

9    for TQ Delta's standard essential patents?

10   A.   No, I don't believe they've come to us for a license.

11   Q.   Okay.  And as you testified on direct examination, you

12   approached them.  Correct?

13   A.   We did.

14   Q.   Okay.  And so in your view, if somebody is not an

15   applicant or, as you said, unwilling, what does that mean with

16   respect to your obligations to the ITU's patent policy?

17   A.   Well, it means that you can't -- you can't enter into a

18   negotiation, so you can't -- you aren't necessarily held to

19   the -- the obligations under the -- the policy.

20   Q.   And is that sometimes called an unwilling licensee?

21   A.   Yes, it is.

22   Q.   How would you describe the conduct of a willing licensee?

23   A.   So a willing licensee will either approach you when they

24   need a license or, when approached and notified about the need

25   for a license, enter into good faith discussions and
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 1   negotiations where they provide information about their sales,

 2   they provide information about their forecasts, they provide

 3   information about their -- the features and capabilities of

 4   their products, that sort of thing.

 5   Q.   And I believe you mentioned that sometimes a willing

 6   licensee will approach you.  Is that correct?

 7   A.   Yes.

 8   Q.   Does TQ Delta have any licenses with any licensees who

 9   actually approached you before selling the product?

10   A.   Yes, we do.

11   Q.   And who would that be with?

12   A.   That would be Siemens.

13   Q.   Okay.  And can you please describe for the jury what

14   happened when Siemens approached you?

15   A.   So Siemens came to us through our -- our website and

16   indicated that they wanted to negotiate a license.

17   Q.   And what kind of a product were they trying to sell?

18   A.   So they were developing a product that was a DSL

19   equipment-based product that was meant for harsh conditions.

20   It was called the rugged.com.

21   Q.   And did it comply with any ITU DSL standards?

22   A.   It did.

23   Q.   Which standard?

24   A.   The VDSL2 standard.

25   Q.   And did you grant Siemens a license for that product?
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1    A.    We did grant them a license.

2    Q.    Okay.  What standards were included in that license?

3    A.    So because they came to us as they were developing and

4    designing that product and knew that they would be using VDSL2

5    and just VDSL2, it was a narrower license for just the VDSL2

6    standard that they were going to practice.

7    Q.    Okay.  And the company, I referred to them as Siemens,

8    but do you remember more specifically what their name is?

9    A.    I believe it's Siemens Canada.

10   Q.    Okay.  And would that be related to -- is that different

11   than, for example, other Siemens entities?

12   A.    It is.

13   Q.    So when you have a willing licensee, what does reasonable

14   and non-discriminatory mean in the context of licensing

15   standard essential patents?

16         MR. DACUS:  Objection, Your Honor; calls for an

17   expert and legal conclusion both.

18         THE COURT:  What's your response, Mr. Davis?

19         MR. DAVIS:  Your Honor, she's testifying as to her

20   personal knowledge as a person who's been in this industry

21   licensing standard essential patents for a very long time.

22   She has to have some personal understanding of what --

23         THE COURT:  Restate the question making it clear it

24   calls for her own personal knowledge and experience.

25         MR. DAVIS:  Yes, Your Honor.
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1   Q.   (BY MR. DAVIS) Ms. Divine, in your personal knowledge

2   and experience in this industry, what does it mean when you

3   have a willing licensee to negotiate on reasonable and

4   non-discriminatory terms?

5   A.   So in my experience, what it means is, as I said, willing

6   licensee comes to the table and negotiates, provides

7   information, and the non-discriminatory aspect of it is you're

8   treating similarly-situated companies with -- in reasonably

9   the same terms.

10   Q.   Now, does this -- sometimes it's been called RAND

11   obligation, which is referring to the ITU patent policy. Does

12   this RAND obligation mean that every company gets the exact

13   same terms?

14   A.   No, it doesn't mean that.

15   Q.   What does it mean?

16   A.   It means that you work with the licensees to establish a

17   license that covers their use, covers -- is generally

18   consistent with the licenses to other similarly-situated

19   companies, but you take into consideration, you know, all the

20   factors leading to that negotiation.

21   So if they're an early entrant to the market, you might

22   take that into consideration because they're not -- you know,

23   they don't have the benefit of seeing the -- the patents be

24   upheld, they don't have other market signals to tell them

25   what's reasonable, so they -- you know, they have to make some

1   assessments on their own. They're taking a bit of risk. In

2   other cases, if someone wants a very narrow license, they

3   might, you know, only take a U.S. license, for example,

4   instead of a worldwide license.

5   And then to treat others fairly, you would -- you know,

6   those that are taking a worldwide license which is more

7   efficient, as everyone acknowledges, then those that are

8   taking a less efficient license, you know, shouldn't have an

9   advantage over the -- the others.

10   MR. DAVIS: Your Honor, may I display Mr. Dacus'

11   demonstrative that he did on his cross-examination?

12   THE COURT: You may.

13   MR. DAVIS: Thank you, Your Honor.

14   Q.   (BY MR. DAVIS) Do you remember on cross-examination, Ms.

15   Divine, when Mr. Dacus was asking you questions about these

16   two lines on his chart?

17   A.   Yes.

18   Q.   And one of them is Infineon and the other is Lantiq. Do

19   you recall that?

20   A.   I do.

21   Q.   What kind of companies are Infineon and Lantiq?

22   A.   They are both semiconductor companies. They make chips.

23   Q.   And I believe he asked you whether or not -- I believe it

24   was the Infineon agreement was signed in 2009. Do you

25   remember him showing you that?

1   A.   I do remember him showing me that.

2   Q.   So what is the history of the relationship between

3   Infineon and Aware?

4   A.   It dates back many, many years. So I believe they first

5   started working together in 1998 to work, as I said, in joint

6   development efforts strategically to develop technology and

7   products.

8   Q.   And do you know how many times over the years the

9   original 1998 agreement from which the Infineon and Lantiq

10   agreements ultimately sprung from, how many times that

11   agreement was amended?

12   A.   It was amended many times. I don't remember how many.

13   Q.   Okay. Would it surprise you if I -- if I told you or if

14   a subsequent witness was going to testify that it was 30

15   times, would that surprise you?

16   A.   No. I knew it was -- it was many, many times.

17   Q.   Why would that not surprise you?

18   A.   Well, because, you know, relationship dating back to 1998

19   before, you know, a lot of these standards were in place,

20   before the market had developed, that we're working closely

21   together, you know, their relationship would necessarily

22   evolve over time.

23   And so that, and then, you know, as we talked about, the

24   companies changed. Infineon became Lantiq and so forth.

25   Q.   And in 1998, was there even a DSL market for CommScope to

1   sell products into?

2   A.   I don't think so.

3   Q.   Okay. So this 19 -- these joint development agreements,

4   they also -- did they also have a license agreement attached

5   to them?

6   A.   They did.

7   Q.   And what patents had issued to Aware in 1998 when the

8   original license agreement was granted to the predecessor

9   companies of Lantiq and Infineon?

10   A.   Well, certainly not all of the patents that we acquired

11   in the portfolio in 2012. A very small subset.

12   Q.   Okay. And the -- Siemens Canada, while perhaps today the

13   Infineon and Lantiq agreements cover 200 patents, those are

14   the 200 patents that TQ Delta currently owns. Is that right?

15   A.   That's right.

16   Q.   Okay. And how many of those patents issued after TQ

17   Delta acquired the portfolio?

18   A.   Well, so when we acquired the portfolio, I think, you

19   know, it was around 150. Since the portfolio was acquired and

20   we developed it further, I think we've issued another 235

21   patents.

22   Q.   And so would that be an example of the work that you and

23   TQ Delta and Mr. Tzannes had carried on from before when the

24   patents were owned by Aware?

25   A.   Yes.

1 Q.   So Lantiq and Zhone, again, what kind of companies are

2 these?

3 A.   So Lantiq is a semiconductor or chip company.

4 Q.   Okay. And in your mind, is it unfair or unreasonable to

5 negotiate different terms with a company like CommScope than

6 Aware negotiated with chip companies under a joint development

7 agreement in 1998?

8 A.   No, they are very, very different relationships and

9 companies. So they're not similarly-situated. They -- you

10 know, as we talked about, they're -- the Lantiq is a chip

11 company; commScope and others are DSL equipment providers.

12   The Lantiq agreement was between strategic partners who

13 were trying to develop a market and working, you know,

14 hand-in-hand on technology; whereas, CommScope has been in the

15 market, has product, and has just been using the patents.

16 Q.   And I believe Mr. Dacus asked you to assume that the cost

17 of a chip in these agreements was a dollar. Do you recall

18 that?

19 A.   I think he said --

20 Q.   He asked you to calculate the rates that would be owed

21 per chip.

22 A.   I believe he said $10.

23 Q. $10? Okay. Is that what he said? All right. $10.

24   Now, when the -- so for the -- but you don't actually

25 know how much the chips cost?

1   A.   I don't.

2   Q.   Okay. Now, at the time that this agreement was

3   negotiated, do you -- you said there was no DSL market. Was

4   there any way to know exactly how successful or unsuccessful

5   the DSL market would be at that time?

6   A.   No, I don't think so because, as I said earlier, AT&T,

7   Project Pronto was the first and largest investment, so we

8   really sort of made the market.

9   Q.   And what is your understanding as to whether or not DSL

10   chips in and of themselves would infringe the patents that are

11   asserted in this case by themselves?

12   A.   My understanding is they don't necessarily.

13   Q.   Okay. And so do you think it's unreasonable or unfair to

14   negotiate different terms with a DSL maker, modem maker, such

15   as CommScope, beginning in 2013 up until before this trial

16   started, to negotiate different financial terms than were

17   negotiated as early as 1998?

18   A.   No. Again, very differently-situated companies, both in

19   time, product, and use of the patents.

20   Q.   And did Aware, as part of its joint development agreement

21   with these companies, did it receive other compensation that

22   you're aware of?

23   A.   It's my understanding that they did.

24   Q.   Okay. And so you -- and I think we've already talked

25   about how the fact that in 1998 when these agreements were

1   first negotiated, there were not 200 patents. Is that

2   correct?

3   A.   There were not.

4   Q.   Okay. I want to talk about -- excuse me. Would

5   you -- do you see here where he asked you about CommScope in

6   this lawsuit?

7   A.   Yes.

8   Q.   And he, Mr. Dacus, said that there were only seven

9   patents at issue. Do you recall that?

10   A.   Yes, I do.

11   Q.   Now, the seven patents at issue, are they part of larger

12   families?

13   A.   They are.

14   Q.   Okay. So how many families do the seven patents at issue

15   in this case represent?

16   A.   I believe they represent seven families.

17   Q.   And within those families, do you have any sense for how

18   many total patents would be involved?

19   A.   There are tens of patents in each family, so, you know,

20   between 70 and 100 probably.

21   Q.   Okay. 70 and a hundred.

22   A.   Uh-huh.

23   Q.   And when you initially reached out to CommScope in 2013,

24   what kind of a -- what was the scope of the license you were

25   willing to negotiate with them?

1   A.   So we were willing to negotiate a reasonable license to

2   cover DSL equipment, like what they made, for the DSL

3   standards that existed at the time.

4   Q.   And what would be the geographical scope of that license?

5   A.   Certainly worldwide.

6   Q.   So when you were negotiating with CommScope before we all

7   got into court last Friday, you were negotiating with them on

8   a worldwide basis. Is that right?

9   A.   That's what we were attempting to do.

10   Q.   And I believe Mr. Dacus asked you -- or asked you to

11   agree with him that in this lawsuit you're only asking for

12   U.S. damages.

13   A.   That's correct.

14   Q.   Why are you only asking for U.S. damages in this lawsuit?

15   A.   Well, because the law in the United States only provides

16   for -- provides us the ability to get remedy or payment for

17   the use of the patents in U.S.-based products.

18   Q.   Okay. And if I recall your direct testimony, has

19   CommScope ever provided you with their worldwide sales

20   numbers?

21   A.   They did not give us those sales numbers for 10 years. I

22   think we just got them maybe three weeks before this trial.

23   Q.   Okay. And so if you were negotiating a license with

24   CommScope on a worldwide basis, would this number be higher or

25   lower in terms of the -- well, let me back up.

1   The number of units at issue in the United States is 36

2   million. Is that correct?

3   A.   That's what I understand.

4   Q.   Okay. And so for the rest of the world, would the

5   numbers be higher than that?

6   A.   Yes.

7   Q.   And if they are higher, would this number actually be

8   higher than this 89 million?

9   A.   It would.

10   Q.   Okay. So this 89 million is just U.S. only.

11   A.   That's correct.

12   Q.   Okay.

13   MR. DAVIS: Could I have Exhibit -- Mr. Diaz, I'm

14   okay with that right now.

15   Q.   (BY MR. DAVIS) Do you remember when Mr. Dacus was asking

16   you about the DSL modem, and I believe he was showing you a

17   slide from our opening statement that had a DSL modem picture

18   on it?

19   A.   Yes, I think so.

20   Q.   And I believe he was asking you how much that DSL modem

21   cost, and you didn't quite remember. Do you remember that?

22   A.   Yes, I do.

23   Q.   So when a -- here we go. When a customer signs up for

24   DSL with AT&T, how do they get their modem?

25   A.   So when a customer signs up, they -- the company ships

1   them a modem or brings it to them.

2   Q.   So they don't go out to the store and buy a modem and

3   hook it up and have AT&T then provide the service. Is that

4   correct?

5   A.   No, no.

6   Q.   Okay. And so how does AT&T then pay for the price that

7   they purchased the modem from CommScope for?

8   A.   Well, they -- you know, they put it in the subscription

9   and the cost of the installation.

10   Q.   So they make it up through the service fees that they

11   charge their customers?

12   A.   Yes.

13   Q.   Okay.

14   MR. DAVIS: You can take that down, Mr. Diaz. Thank

15   you.

16   Q.   (BY MR. DAVIS) Now, after -- in the course of your

17   negotiations in this lawsuit with CommScope between 2013 and

18   2021, the last email we looked at on your direct, did

19   CommScope ever tell you that your rates were too high because

20   of the price of a DSL modem?

21   A.   No.

22   Q.   Okay. Is that a new argument that you're hearing for the

23   first time in court this week?

24   A.   It is.

25   MR. DAVIS: If I could have Exhibit 36-A, please,

1   Mr. Diaz.

2   Q.   (BY MR. DAVIS) And do you recall what this is, Ms.

3   Divine?

4   A.   Yes.

5   Q.   And what is it?

6   A.   This is the patent license agreement between TQ Delta and

7   Zhone.

8   Q.   Okay.

9   MR. DAVIS: And could we please --

10   Q.   (BY MR. DAVIS) Again, what is the date of this

11   agreement?

12   A.   November 30th, 2017.

13   Q.   Okay. And did Zhone -- did you -- you testified on

14   direct that you actually provided Zhone with a 25 percent

15   discount. Is that right?

16   A.   Yes.

17   Q.   And why were you willing to give Zhone a 25 percent

18   discount on its agreement?

19   A.   Well, so Zhone was -- came to the table with -- and

20   negotiated in good faith, gave us their sales information,

21   gave us their product information, and, as I said earlier,

22   they were a willing licensee. So they were the first and, in

23   fact, they were the first to take a license and negotiate

24   these -- the rates and terms with us on a worldwide basis.

25   Q.   And what is the -- are the rates listed in the Zhone

1   agreement?

2   A.   They are.

3   Q.   Okay. And where would those be found?

4   A.   I believe they're in the exhibit, Exhibit A.

5   Q.   Okay.

6   MR. DAVIS: Mr. Diaz, can you please bring up

7   Exhibit B?

8   I'm sorry. Ms. Divine is exactly correct. Exhibit A,

9   please. Could you zoom in there, please?

10   Q.   (BY MR. DAVIS) We can start here. What is in Exhibit A?

11   A.   So Exhibit A is the information that Zhone provided us

12   about the volumes of the equipment that they sold, the CPE

13   equipment that they sold in each year, and then they gave us a

14   basis for the forecast. You know, they explained to us what

15   their forecast was through the term of this license, which was

16   into 2019.

17   Q.   So Zhone provided you with their sales data upon which to

18   calculate the total amount that they would owe under the

19   agreement. Is that correct?

20   A.   That's true.

21   Q.   Okay.

22   MR. DAVIS: And could we have section 3.1 of this

23   agreement, please, Mr. Diaz?

24   Q.   (BY MR. DAVIS) Does the Zhone agreement provide for TQ

25   Delta's standard royalty rates?

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1    A.    It does.

2    Q.    Okay.  And, again, can you remind us what those are?

3    A.    Yes.  So for the standards at issue in this case, they're

4    90 cents per unit for VDSL2, they are 25 cents per unit for

5    G.INP, and they are 70 cents per unit for bonding.

6    Q.    Okay.  Thank you.

7              MR. DAVIS:  Could I please have Exhibit 39, Mr.

8    Diaz?  And if we could go to section 2.4.2.

9    Q.    (BY MR. DAVIS)  What does section 2.4.2 of the Fujitsu

10   license show with respect to TQ Delta's rates?

11   A.    So 2.4.2 outlines our rates again for -- again, these are

12   our rates for the standards at issue in this case as well as

13   other standards.

14   Q.    And what are the rates for the standards at issue in this

15   case?

16   A.    VDSL2 at 90 cents, G.INP at 25 cents, and bonding at 70

17   cents.

18   Q.    Okay.  And was Fujitsu a willing licensee?

19   A.    They were.

20   Q.    And how do you know?

21   A.    So we approached Fujitsu, they entered into discussions

22   with us, they asked and discussed with us -- asked questions,

23   discussed with us the capabilities of their products and

24   shared their volumes with us so that we could negotiate.

25   Q.    And did Fujitsu receive any discounts?
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1   A.   They did not.

2   Q.   Okay.

3   MR. DAVIS: Could I have Exhibit 67, please, Mr.

4   Diaz?

5   Q.   (BY MR. DAVIS)   What is Exhibit No. 67, Ms. Divine?

6   A.   This is a patent license agreement between TQ Delta and

7   Siemens Canada.

8   Q.   And does the Siemens Canada provide for TQ Delta's

9   standard DSL equipment manufacturer rates for the standards at

10   issue in this agreement?

11   A.   It does.

12   Q.   And do you know what section that is?

13   A.   Umm --

14   MR. DAVIS: Could we have section 3.1, please, Mr.

15   Diaz?

16   Q.   (BY MR. DAVIS)   And does section 3.1 provide for -- well,

17   let me ask this.   What is the standard at issue for the

18   Siemens license?

19   A.   So the Siemens license is just for the VDSL2 standard.

20   Q.   Okay.   And where in section 3.1 does it outline the rate

21   for the VDSL2 standard for Siemens?

22   A.   So it -- right here where it says a $1.80 if there were

23   two ports, and 90 cents per port.

24   Q.   Okay.   And was Siemens a willing licensee?

25   A.   Yes, they were.

1   Q.   In fact, they're the ones that came to you before they

2   manufactured and designed their product?

3   A.   Yeah. So, you know, they did exactly what companies

4   ought to be doing, which is, they're designing a product, they

5   realize they need VDSL capability, they found us and came to

6   us and said, we'd like to negotiate a license.

7   Q.   And was the Siemens product a big seller?

8   A.   No, unfortunately not.

9   Q.   And what was the -- what was the total amount for the

10   royalties that Siemens paid you over the years under this

11   90-cent per port agreement?

12   A.   I think it was around $7,000.

13   Q.   Okay. Now, when Siemens came to you and asked for a

14   license, did you know or -- did you know whether or not the

15   Siemens product was going to be a big seller or not?

16   A.   No. I don't -- I mean, certainly they had hopes of -- I

17   think the product was being developed for a military or a

18   government contract, and I think it didn't come through. But

19   I think at the time they were hoping that that was what they

20   would be selling into.

21   MR. DAVIS: Could I have Exhibit No. 37, please, Mr.

22   Diaz?

23   Q.   (BY MR. DAVIS) And what is Exhibit No. 37, Ms. Divine?

24   A.   This is the patent license agreement between TQ Delta and

25   ZyXEL.

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1   Q.   And what kind of company is ZyXEL?

2   A.   They are a DSL equipment company.

3   Q.   Okay. And does this agreement contain TQ Delta's

4   standard royalty rates?

5   A.   It does.

6   Q.   Okay. And what were the rates that ZyXEL paid in this

7   agreement?

8   A.   So the rates outlined in this agreement are 90 cents for

9   VDSL2 unit, 70 cents per unit for G.bond, and 25 cents per

10 unit -- I'm sorry. Rather, there was a slight difference for

11 the G.INP. I think it was 12-and-a-half cents per unit for

12 G.INP.

13   MR. DAVIS: Can we have Exhibit A to this, please,

14 Mr. Diaz?

15 Q.   (BY MR. DAVIS) I heard you testify that for G.INP, rate

16 was a little different. And you said it was 12-and-a-half

17 cents, and your normal rate is 25 cents. Is that correct?

18 A.   That's right.

19 Q.   Why did ZyXEL receive basically a 12-and-a-half cent

20 reduced royalty rate?

21 A.   So when they came to the table to negotiate with us,

22 they -- you know, they asked questions, they gave us some

23 explanation and understanding of their own products, and they

24 raised reasonable questions as to whether they had fully

25 implemented the G.INP standard.

1   Q.   Okay. And because they brought technical information to

2   you, were you willing to reduce your rate for them?

3   A.   Yeah. So we decided to -- you know, in the interest of

4   trying to overcome that uncertainty, to meet them in the

5   middle and offer them a license at 12-and-a-half cents.

6   Q.   And did CommScope ever bring any technical information to

7   you to tell you that you were wrong about how their products

8   work or whether they comply with the standards?

9   A.   No. I mean, most of the time they told us they didn't

10   know how their product worked.

11   Q.   And you also mentioned that you provided ZyXEL a 25

12   percent discount. Why was that?

13   A.   So ZyXEL came to the table as a willing licensee to

14   negotiate with us, gave us the information that I just

15   mentioned, and they were the first to take a fully paid-up,

16   worldwide license to our portfolio DSL patents and standards.

17   Q.   And did ZyXEL provide you with their sales information?

18   A.   They did.

19   Q.   And did you use ZyXEL's sales information and the rates

20   listed at the top of Exhibit A to calculate the amount that

21   ZyXEL would owe?

22   A.   We did.

23   Q.   Okay. Now, I believe there was --

24   MR. DAVIS: Could you pan down just a little bit,

25   please, Mr. Diaz?

1   Q.   (BY MR. DAVIS)   There was -- there were a lot of

2   questions on cross-examination about this adjustment.   Could

3   you please explain to the jury what this adjustment for patent

4   expiration and pre-payment of future royalties means?

5   A.   Sure.   There's -- there's two parts.   There's an

6   adjustment for patent expiration or the life of the patent

7   families.   And so as time goes on, you know, patents have a

8   defined lifetime, and we don't charge for the use of our

9   patents after that lifetime is over.

10   And so we make an adjustment historically and into the

11   future, depending on when the license is taken, to account for

12   when those patents or those families go end of life.

13   The second part is the pre-payment of future royalties.

14   So when a licensee comes to us and says, you know, I'm here to

15   pay for my past use, but I also want to be able to pay a

16   license and not have to come back again and -- and have a

17   further negotiation like this, or I don't want to pay, you

18   know, on an ongoing basis, I'm willing to estimate with you

19   what my future unit volumes and the kinds of products and

20   standards they're going to practice, I'm willing to work with

21   you to tell you that so that we can then apply the -- apply

22   the rates to those units and figure out what the license fee

23   would be.   But then because they're prepaying, it's like

24   prepaying, you know, for something in the

25   future--you -- the -- you're taking the -- the risk of that

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 1    value of that dollar in the future now, and so it's usually at

 2    a -- an adjustment.

 3    Q.   Okay.  Does this adjustment for patent expiration and

 4    pre-payment of future royalties, does that in any way, shape,

 5    or form represent a discount off of TQ Delta's standard

 6    royalty rates?

 7    A.   It does not.  And we make this adjustment for anyone.

 8    Q.   Now, as far as adjustment for patent expiration, did you

 9    offer to CommScope a pre-payment for patent expiration?

10    A.   We did.  They asked for a lump sum, and they never gave

11    us their volumes, so we had to on our own, you know, first

12    figure out from public data what we thought their historical

13    volumes were, and then try to project out what we thought

14    they'd sell in the future, and then apply all of what I just

15    described to get to that lump sum.

16    Q.   Okay.  And that makes sense.  Right?  Because as you

17    said, you're not trying to charge CommScope or anyone else for

18    infringing units after a patent's term has ended.  Isn't that

19    right?

20    A.   That's right.

21    Q.   And when CommScope asked for a lump sum royalty, did the

22    offer that you made to them include an adjustment for

23    pre-payment of future royalties?

24    A.   It did.

25    Q.   Okay.  And had CommScope given you their sales volumes or
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 1    their future projections with which you could make an accurate

 2    determination as to what that adjustment should be?

 3    A.    No.  Again, we were, you know, sort of shooting in the

 4    dark to determine what their future volumes would be.

 5    Q.    And so how -- what -- what data did you use to make the

 6    adjustment for patent expiration and pre-payment of future

 7    royalties based on future projected sales?

 8    A.    So there's a few steps to it.  So, first, we would -- for

 9    the patent life, we'd be looking at, you know, when -- when

10    does each family come to end of life and make that adjustment.

11    And then -- then we're matching it up with the volumes

12    historically, again from public data that we understand, and,

13    you know, making the adjustment year by year.  And then for

14    future, we look to market research, the same public data,

15    market research that was indicating, you know, sort of what

16    the rate of growth would be projecting for companies like

17    CommScope, and we just used that.

18    Q.    So it is, in fact, a true statement that you did offer

19    CommScope adjustments for patent expiration and pre-payment?

20    A.    We did.  We rolled that into the -- into the lump sum.

21    Q.    And even in this lawsuit, are you seeking damages from

22    CommScope based upon Doctor Putnam's analysis for any sales

23    after patent term ends at all?

24    A.    Absolutely not.

25    Q.    Okay.  And are -- do you know whether Doctor Putnam's
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1   damages model in this case would include projections for

2   future sales?

3   A.   I don't believe it does.

4   Q.   Okay. If it does, do you think Doctor Putnam would

5   adjust for pre-payment of future royalties as a lump sum?

6   A.   I believe he would if they were to pay today.

7   Q.   It's pretty common. Correct?

8   A.   It is very common.

9   Q.   Okay.

10   MR. DAVIS: Could we scroll down just a little bit

11   more, please, Mr. Diaz? Let's look at the 25 percent

12   discount.

13   Q.   (BY MR. DAVIS) Why did you offer ZyXEL a 25 percent

14   discount in this agreement?

15   A.   Well, as I said before, you know, they came to the table,

16   they provided us the sales information, they talked to us

17   about the operation of the products and the standards and our

18   patents, and then they were the first to negotiate a fully

19   paid-up, worldwide license for our patent portfolio.

20   Q.   Now, all of the licenses that TQ Delta has entered into,

21   are those based upon actual sales?

22   A.   Yes.

23   Q.   Okay. And so if you're basing a license on actual sales,

24   will the total dollar amount paid under those licenses all be

25   the same?

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1    A.   No, of course not.

2    Q.   Well, why is that?

3    A.   Well, because everybody doesn't sell the same number.  So

4    if you sell fewer, like Siemens did here, you know, your

5    number -- the dollar amount is going to be lower because

6    you're multiplying by a smaller number of units.  If you are

7    the market leader and you sell the most, then your number's

8    going to be higher because you sold the most.

9    Q.   And so, again, how many units has CommScope sold in the

10   United States?

11   A.   I believe it was 36 million.

12   Q.   36 million units.  So is the damages award that Doctor

13   Putnam has opined upon and you are asking the jury to award,

14   is that based upon the number of units sold or the based upon

15   the amount of other licenses?

16   A.   It's based on, as I understand it, the number of units

17   sold.

18   Q.   And do you recall -- let's take Nokia, for example.  Do

19   you recall how many units Nokia sold to ultimately get to this

20   14.9 number that Nokia paid?

21   A.   I believe they paid -- I believe they sold about 5.8

22   million units.

23   Q.   5.8 million units?

24   A.   Yes.

25   Q.   Okay.  And they paid $14.9 million.  Correct?
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 1    A.    That's correct.

 2    Q.    And if you were to do that math on a per-unit basis, was

 3    Nokia paying more than less than TQ Delta's standard royalty

 4    rates?

 5    A.    They were paying more.

 6    Q.    And do you know approximately how much?

 7    A.    They paid about 30 percent more.

 8    Q.    Okay.  Was the Nokia agreement that was signed just a few

 9    months ago, was that a worldwide license or not?

10    A.    No, it was --

11               MR. DACUS:  Consistent with what we did earlier, I

12    think we probably need to seal the courtroom.

13               MR. DAVIS:  No objection, Your Honor.

14               THE COURT:  All right.  Based on counsel's request

15    and to protect proprietary and confidential information, I'll

16    order the courtroom sealed.

17        I'll direct that all persons present who are not subject

18    to the protective order that the Court's entered in this case

19    should excuse themselves and remain outside the courtroom

20    until it is reopened and unsealed.

21                           (Courtroom sealed.)

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24   (Courtroom unsealed.)

25   THE COURT: And with that, Plaintiff, call your next

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 1   witness.

 2              MR. DAVIS:  Your Honor, Plaintiffs call Doctor

 3   Arthur Brody to the stand.

 4              THE COURT:  All right.  Doctor Brody, if you will

 5   come forward and be sworn, please.

 6              (Whereupon, the oath was administered by the Clerk.)

 7              THE COURT:  Please come around and have a seat at

 8   the witness stand, please.

 9              MS. RATYCZ:  Your Honor, may I approach?

10              THE COURT:  You may.

11        And, Ms. Divine, you are going to return to the counsel

12   table as the representative of the Plaintiff.  Correct?

13              MS. DIVINE:  Yes.

14              THE COURT:  Thank you.

15        This is your witness, Mr. Davis?

16              MR. DAVIS:  No, Your Honor.  This is Ms. Ratycz's.

17              THE COURT:  All right.  Doctor Brody, pull that

18   microphone a little closer to you, please.  Thank you.

19              THE WITNESS:  How's this?

20              THE COURT:  That's good.

21        All right.  Counsel, are you ready to proceed with direct

22   examination?

23              MS. RATYCZ:  Yes, Your Honor.

24              THE COURT:  All right.  You may proceed when you're

25   ready.
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 1              MS. RATYCZ:  And it's Ashley Ratycz on behalf of TQ

 2     Delta.

 3                   ARTHUR BRODY, Ph.D., SWORN,

 4     having been duly sworn, testified under oath as follows:

 5                        DIRECT EXAMINATION

 6     By Ms. Ratycz:

 7     Q.   Good afternoon.  Will you please introduce yourself to

 8     the jury?

 9     A.   Yes.  My name is Arthur Brody.

10     Q.   Do you have a family, Doctor Brody?

11     A.   Yes, I do.  I have my wife Robin, and I have three

12     children and two grandchildren.

13     Q.   And where do you live?

14     A.   I live in Stanford, Connecticut.

15     Q.   Who asked you to provide testimony in this case?

16     A.   It was TQ Delta and TQ Delta's attorneys.

17     Q.   Did you prepare any materials to help explain your

18     testimony today?

19     A.   Yes, I did.

20     Q.   And is the first slide of that presentation showing on

21     your screen?

22     A.   Yes, it is.

23              MS. RATYCZ:  Your Honor, may I publish the slides to

24     the jury?

25              THE COURT:  You may.  I assume you're going to
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1   qualify this witness as an expert?

2   MS. RATYCZ: Yes.

3   THE COURT: Then we'll do it all together.

4   Q.   (BY MS. RATYCZ) Can you please describe your educational

5   background to the jury?

6   A.   I have a Bachelor of Science in physics from City College

7   of New York, and I have a Ph.D. in experimental particle

8   physics from Stony Brook University.

9   Q.   After finishing your Ph.D., where did you work?

10   A.   I work for Bell Laboratories. And when I was there,

11   first system I worked on was a test system trying to identify

12   problems on the line and preventing the dispatching of

13   personnel to places they shouldn't be.

14   Q.   And what did you do after working at Bell Labs?

15   A.   I worked for Technicom Systems. And at Technicom, I

16   was -- one of the systems I sold were systems that identified

17   load coils. And what load coils did were they cut off the

18   high frequencies. So they were very problematic for DSL

19   lines.

20   Q.   What did you do after working at Technicom?

21   A.   I started my own company, which is A.T. Brody &

22   Associates, which provide consulting services to

23   telecommunications network and to start-up companies.

24   THE COURT: Doctor Brody, could you slow down just a

25   little bit?

1   THE WITNESS: Yes, sir.

2   THE COURT: If you'll talk a little slower, it would

3   be helpful. Thank you.

4   Q.   (BY MS. RATYCZ) Does any of your consulting experience

5   at A. T. Brody & Associates relate to DSL?

6   A.   Yes, it was.

7   Q.   And can you provide me an example?

8   A.   In the late '90s, I was helping manufacturers bring DSL

9   access multiplexers, also called DSLAMs, into the United

10   States. And I had to provide requirements for them on things

11   like which DSL variants to use, how to connect to the network

12   using something called ATM or IP, and also what operating

13   support systems they had to connect to in the United States

14   environment.

15   Q.   Can you provide any other examples where you used your

16   experience for DSL?

17   A.   Yes, I can. For Insight Research, I wrote market

18   research reports. And I also provided custom research to

19   their customers, and that research included new transport

20   technologies such as IP and, of course, DSL.

21   Q.   Do you currently do any volunteer work that utilizes your

22   technical background?

23   A.   Yes. I currently volunteer at the City College of New

24   York, STEM Institute, and I am also a member of the Zahn

25   Innovation Center on the board of directors and a mentor.

1   Q.   And what is Zahn Innovation Information?

2   A.   The Zahn Innovation Center will take students who have

3   ideas for start-ups and try to get funding for those students.

4   Q.   How long have you been in the telecommunications

5   industry?

6   A.   I've been in the telecommunications industry for over 40

7   years.

8   MS. RATYCZ: Your Honor, at this time TQ Delta

9   offers Dr. Arthur Brody as an expert in the field of

10   communication systems, including DSL systems and the subject

11   matter of the asserted patents.

12   THE COURT: Is there objection?

13   MR. STEVENS: No, Your Honor.

14   THE COURT: Without objection, the Court will

15   recognize this witness as an expert in the designated fields.

16   Please continue. I'm going to ask both of you to slow

17   down just a little bit, please.

18   Q.   (BY MS. RATYCZ) Doctor Brody, what was your role in this

19   case?

20   A.   I was asked to look at the accused products that were

21   produced by CommScope and look at the evidence that was

22   provided and determine if those accused products infringe the

23   asserted claims brought by TQ Delta.

24   Q.   Can you provide an overview of your conclusions?

25   A.   Excuse me?

1   Q.   Could you provide an overview of your conclusions?

2   A.   Yes. If you go to the next slide, please.

3   CommScope's accused products infringe claim 36 of the

4   '686 Patent, which has previously been referred to as the

5   truck roll patent.

6   CommScope's accused products also infringe claim 10 of

7   the '354 Patent, which has been referred to as the ROC patent.

8   Q.   What information did you consider in arriving at your

9   opinions?

10   A.   I considered many different opinions, such as the

11   asserted patents. I reviewed them. I reviewed the

12   prosecution histories of those asserted patents. I reviewed

13   various standards documents. I reviewed the deposition

14   testimony from this case. I reviewed documents describing

15   CommScope's products. I also reviewed documents describing

16   the DSL chipsets in those products.

17   I reviewed the expert opinions of Doctor Cooklev, who

18   performed testing, and also analyzed source code for these

19   accused products. I reviewed the expert reports of

20   CommScope's experts, and any other materials that I happen to

21   mention in my testimony.

22   Q.   Did you prepare an expert report in this case?

23   A.   Yes, I did.

24   Q.   Are you being compensated for your time in this case?

25   A.   Yes, I am.

1   Q.   And is that compensation tied to the substance of your

2   testimony or the outcome of this case?

3   A.   No.   It is unrelated to whatever the outcome of this case

4   is.

5   Q.   Can you briefly explain what the accused products are in

6   this case?

7   A.   Yes.   Please go to the next slide.

8   As you see in this slide, the CPE device, also known as

9   the VDSL transceiver unit or VTU-R, is the accused product.

10   It communicates over plain old telephone service, or POTS,

11   lines that carry your voice back to a CO device typically

12   called the VTU-O.

13   The accused products again are the CPE devices, and they

14   form with the telephone line the DSL connection.

15   Q.   And what are the accused products used for?

16   A.   The accused products are used for, as an example, you

17   know, sending your pictures when you go up to your social --

18   social networking site, or if you download, say, a video from

19   YouTube from the central office in the downstream direction.

20   Q.   Are there any down sides for using the telephone lines

21   for this type of data transmission?

22   A.   Yes, there are.

23   Please go to the next slide.

24   So as Mr. Tzannes had testified, because you're using

25   these very high frequencies in order to send data, the lines

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1    are more susceptible to noise, whether it be from electronics

2    equipment, lightning strikes.  Even temperature changes on

3    long lines can introduce noise.

4    Q.   What type of signal does DSL use to transmit high speed

5    data?

6    A.   DSL, if you go to the next slide, uses an analog wave

7    form which is shown in the middle.  However, you're trying to

8    send bits, and bits are digital information.  You can't send

9    bits, digital bits, over the phone line.  That's why it

10   converts the bits into the analog wave form.

11   Q.   And how are those digital bits converted into the analog

12   wave form?

13   A.   Well, if you go to the next slide, please.

14        Here I'm showing those same bits up on the left-hand side

15   of the screen, and I'm showing that two bits are assigned to

16   each carrier, which is at a different frequency.  So you have

17   the total of eight bits are put on the four frequencies.  And

18   then those frequencies are combined to make an analog

19   transmission signal, and sometimes those frequencies are

20   called sub-carriers.

21   Q.   And how many sub-carriers can DSL use to transmit data?

22   A.   Excuse me?

23   Q.   How many sub-carriers can DSL use to transmit data?

24   A.   Oh, there can be thousands.  It can be over 4,000 for

25   VDSL2, as an example.
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1   Q.   And how many bits can be loaded onto each one of those

2   carriers?

3   A.   So each one of those carriers can have up to 15 bits

4   assigned to them.

5   Q.   So approximately how many bits could be sent per DMT

6   symbol?

7   A.   So symbols are sent 4,000 times a second. The total

8   amount of bits that are sent in each symbol are going to

9   be -- well, I should say is -- there's 15 bits and there's

10   4,000 frequencies. You should end up with 60,000 bits per DMT

11   symbol.

12   Q.   Is DSL always used to transmit that many bits?

13   A.   No, it's is not.

14   Q.   And why might you want to send less data?

15   A.   Well, sometimes you need to send information between the

16   two DSL modems. And in that situation, say there's noise on

17   the line, you want to make sure the signal gets through. So

18   you're going to send less bits per DMT symbol.

19   It's sort of like a fog horn if you think about it. It's

20   a low clear sound that warns people there are rocks or some

21   other type of obstruction ahead.

22   Q.   Is there anything that must be done before the CO and the

23   CPE devices can transmit user data?

24   A.   Yes. Before they can transmit user data, they have to go

25   through a process called initialization.

1   Q.   And what's the purpose of initialization?

2   A.   In initialization, first they try to establish contact

3   between the central office and the CPE device. And then

4   ultimately they measure the strength of each one of those

5   sub-carriers that you've seen of the different frequencies.

6   Q.   And what happens when transceivers complete

7   initialization?

8   A.   They enter a state known as show time, which is where a

9   user such as you or I can send data back and forth from the

10   central office to the CPE.

11   Q.   What CommScope products are accused of infringement in

12   this case?

13   A.   If you would please go to the next slide.

14   So in the first column I've shown the accused product and

15   in the second column the chipset that is used. So the 5168N,

16   the 5168NV, the 5268AC, the NVG589, and the NVG599, all use

17   the Broadcom 63168 chipset.

18   If you go to the next two, the BGW210-700 and the NVG44x

19   both use the 63148 Broadcom chipset. And the final one, the

20   Pace 5031NV, uses the Broadcom 6368 chipset.

21   Q.   And what do you have shown in the third column on the

22   slide?

23   A.   That is the code, also called firmware, that is actually

24   run on the chips, and those are the DSL modem code versions.

25   Q.   Are there any material differences between the accused

1   products as it relates to the functionality that you rely on

2   for your opinions?

3   A.   No, there is not.

4   Q.   And what do you base your opinion on?

5   A.   I base that on the fact that Doctor Cooklev reviewed the

6   source code for all the chipsets and found that there were no

7   material differences for the -- my opinions.

8   Q.   And who is Doctor Cooklev?

9   A.   Doctor Cooklev will be testifying later. He also,

10 besides doing testing and source code for the products that I

11 have reviewed, will also be testifying about his own products

12 and performed testing for other products.

13 Q.   Did he submit a report in this case?

14 A.   Yes, he did.

15 Q.   And did you review that report?

16 A.   Yes, I did review that report.

17 Q.   Now, the fact that there are no material differences in

18 the products, what does that mean for purposes of

19 infringement?

20 A.   For purposes of infringement, it means that if any one of

21 the products infringes, they must all infringe.

22 Q.   Have you chosen a product to use for your infringement

23 analysis?

24 A.   Yes, I have.

25   If you will please go to the next slide. Sorry.

1   Yes, I have. It was the BGW210-700.

2   Q.   Are you familiar with the ITU-T standards?

3   A.   Yes, I am.

4   Q.   And are there any ITU-T standards relevant to your

5   opinions today?

6   A.   Yes, there are.

7   Q.   And which ones?

8   A.   Please go to the next slide.

9   And what you'll see is Exhibit 34 is the VDSL2 standard,

10   and Exhibit 025-A is the G.INP standard.

11   Q.   And do the accused products comply with these standards?

12   A.   Yes. The products do comply with these standards.

13   Q.   How do you know that?

14   A.   If you'd go to the next slide, please.

15   So this is a CommScope data sheet put out by CommScope,

16   and it says it supports VDSL2 and it supports G.INP. And this

17   is Exhibit 17.

18   Q.   Are there similar products data sheets for the other

19   accused products?

20   A.   Yes, there are. For example, there is Exhibit 19 for the

21   5168N and Exhibit 23 for the 5268AC.

22   Q.   Did you rely on any other evidence for your opinion that

23   the accused products comply with the standards?

24   A.   Yes, I did.

25   Q.   And what did you rely on?

1   A.   Please go to the next slide.

2   I relied on the UberMatrix.

3   Q.   What is the UberMatrix?

4   A.   The UberMatrix is a document shared by CommScope and its

5   largest customer, AT&T. And AT&T provides their requirements

6   in that document which is actually a spreadsheet, and

7   CommScope says whether they comply or not with that

8   requirement.

9   Q.   How does AT&T communicate a requirement using the

10   UberMatrix?

11   A.   AT&T will enter in one of the columns an R, meaning that

12   there's a requirement as shown on the left on the top.

13   Q.   And how does CommScope communicate back to AT&T whether

14   the product actually complies with that requirement.

15   A.   Well, if they're compliant, CommScope will enter a C as

16   shown on the right of these two rows from the UberMatrix.

17   Q.   And which portions of the UberMatrix are you showing on

18   the slide?

19   A.   I'm showing row 400 from the BGW210-700 UberMatrix, which

20   is Exhibit 71. And that shows that there was compliance with

21   VDSL2. I'm also showing row 424 which shows there is

22   compliance with G.INP.

23   Q.   Are there other UberMatrix documents for the other

24   products in this case?

25   A.   Yes, there are. For example, Exhibit 72 will have

```
 1   requirements for the 5031NV, the 5168N and -NV, and the

 2   5268AC.

 3   Q.   Where does your understanding of the UberMatrix come

 4   from?

 5   A.   It comes from the testimony of Mr. Miller, who you'll

 6   hear later.

 7   Q.   And who is Mr. Miller?

 8   A.   Mr. Miller was testifying for CommScope.

 9   Q.   And what did Mr. Miller have to say about the UberMatrix?

10   A.   Go to the next slide, please.

11        He basically said that the UberMatrix represented AT&T's

12   requirements and that the C meant that the product met the

13   requirements.

14   Q.   Did you rely on any other evidence to show standards

15   compliance?

16   A.   Yes, I did.

17   Q.   What did you rely on?

18   A.   Please go to the next slide.

19        This is the Exhibit 15, which is the Broadcom data sheet

20   for the 61348 chipset which is used in the BGW210-700.  And as

21   highlighted on the right, it clearly shows that these chipsets

22   are VDSL2 compliant and they are G.INP compliant.

23   Q.   Are there similar chipset data sheets for the other

24   products in this case?

25   A.   Yes.  For example, there is the Exhibit 031 which is the
```

1   BCM63168 chipset.

2   Q.   Which patent would you like to discuss first?

3   A.   The first one I'd like to discuss is the truck roll

4   patent, or the '686 Patent.

5   Q.   And what is the title of the '686 Patent?

6   A.   Please go to the next slide.

7   The title of the patent is, "Systems and Methods for

8   Establishing a Diagnostic Transmission Mode and Communicating

9   Over the Same."

10 Q.   And can you turn to the '686 Patent in your binder, which

11 is Exhibit 2?

12 A.   Yes, I'm there.

13 Q.   Do you know whether the '686 Patent has expired?

14 A.   Yes, it has expired.

15 Q.   Does the fact that the '686 Patent is expired change your

16 opinions regarding infringement?

17 A.   No, it does not.

18 Q.   Does the fact that the '686 Patent has expired relevant

19 in any way to your determination of infringement?

20 A.   With respect to determining infringement, no, it does

21 not.

22 Q.   What does the '686 Patent relate to?

23 A.   Again, as shown on the slide in front of you, it relates

24 to a robust system and method for communicating diagnostic

25 information.

1   Q.   What problem does the '686 Patent solve?

2   A.   If you go to the next slide, please.

3   It's trying to solve and does solve the truck roll

4   problem. Rolling a truck with a person in it somewhere along

5   the line or to your house is a very expensive proposition.

6   You'd much rather solve the problem in the call center. So it

7   solves that problem.

8   The other problem is, once you get out there with the

9   technician and they attach the test equipment, they take your

10   line out of service.

11   MS. RATYCZ: Mr. Diaz, if you can skip ahead to

12   slide 23, I believe.

13   Q.   (BY MS. RATYCZ) Doctor Brody, how do you intend to

14   explain your infringement opinions for the '686 Patent?

15   A.   I'm going to use this chart where I divided the claim up

16   into its claim elements. And when the accused products meet a

17   claim element, you'll see a green checkmark under the accused

18   products.

19   Q.   What evidence did you rely on for your opinions?

20   A.   Please go to the next slide.

21   I relied on many pieces of information and -- for

22   evidence. I've relied on the standard itself. I've relied on

23   documents and deposition testimony that show that the accused

24   products are compliant with that standard. And I've relied on

25   Doctor Cooklev's source code analysis and product testing.

```
 1    Q.    Now, do you know which product Doctor Cooklev tested?

 2    A.    Yes.  Doctor Cooklev tested the 5168NV.

 3    Q.    Do you know why he tested the 5168NV?

 4    A.    That happened to be the product, the CPE device, that was

 5    in the laboratory that he was using to run his tests.

 6    Q.    In your opinion, does Doctor Cooklev's testing of the

 7    51689NV reflect on how the other accused products operate?

 8    A.    Yes, it does.

 9    Q.    What is your basis for doing that?

10    A.    Again, Doctor Cooklev reviewed the source code for these

11    products and found there were no material differences as

12    related to my opinions on the products.

13    Q.    What is the first element of claim 36?

14    A.    If you go to the next slide, please.

15          So the preamble of 36 is, "an information storage media

16    comprising instructions that, when executed, communicate

17    diagnostic information over a communication channel using

18    multicarrier modulation comprising."  And the comprising is it

19    will do the other steps as I'll get into.

20    Q.    And what is your opinion regarding the preamble?

21    A.    The preamble is met by all the accused products.

22    Q.    What evidence did you rely on?

23    A.    If you would go to the next slide, please.

24          So for the first part that I've highlighted, an

25    information storage media comprising instructions, I've gone
```

```
 1    to the UberMatrix.  And the UberMatrix for the -- for this

 2    product the BGW210-700 says that you must have on row 78, 256

 3    megabyte of flash memory.  So that's the information storage.

 4         I also have gone to the, I guess, row 13 which talks

 5    about that there must be firmware downloads.  Firmware is the

 6    code.  So those are the instructions.

 7    Q.   And to clarify which portion of the UberMatrix are you

 8    relying on in the first box on your slide?

 9    A.   Row 87.

10    Q.   Did you rely on any other evidence for the preamble?

11    A.   Yes, I did.

12    Q.   What did you rely on?

13    A.   Please go to the next slide.

14         So I've relied on section 12.4 of the VDSL standard,

15    which says that there is a built-in loop diagnostic function.

16    And it even says it does immediate measurements without

17    dispatching maintenance technicians.

18         Again, this prevents that truck roll.

19    Q.   Do you rely on any other evidence for the preamble?

20    A.   Yes, I do.

21    Q.   And what do you rely on?

22    A.   Please go to the next slide.

23         In this section 12.4.2.1, I'm relating this to the next

24    portion of the preamble that says, When executed, communicate

25    diagnostic information over a communications channel.  And
```

1   that identifies a message called the R-PRM-LD message. LD

2   stands for loop diagnostic. And it says that that message

3   contains certain test parameters, like quiet line noise, and

4   the channel characteristics function. And that is an SOC

5   message. And that diagnostic information is shown below also

6   in table 1273. Again, the QLN and the Hlog is the diagnostic

7   information.

8   Q.   Do you rely on any other evidence for the preamble?

9   A.   Yes, I do. Please go at the next slide.

10   So I rely on the testimony of Doctor Yu. And Doctor Yu

11   said that all the chips perform the loop diagnostic mode

12   function.

13   Q.   And who is Doctor Yu?

14   A.   Doctor Yu is testifying for Broadcom who supplies the DSL

15   chips.

16   Q.   Was Doctor Yu hired on behalf of TQ Delta?

17   A.   No. Doctor Yu was not hired by TQ Delta.

18   Q.   Do you rely on any other evidence for the preamble?

19   A.   Yes, I do.

20   Q.   What do you rely on?

21   A.   Please go to the next slide.

22   Doctor Cooklev in his code analysis identified the

23   portion of the code that generates the R-PRM-LD message.

24   Q.   Do you rely on any other evidence for the preamble?

25   A.   Yes, I do.

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1   Q.   And what do you rely on?

2   A.   Please go to the next slide.

3   And now I'm talking about using multicarrier modulation,

4   which is the last part of the preamble, and the recommendation

5   specifies only discrete multitone, or DMT, modulation.

6   Multitone means multicarrier.

7   Q.   Do you rely on any other evidence for the preamble?

8   A.   Yes, I do.

9   Q.   And what do you rely on?

10   A.   Please go to the next slide.

11   Doctor Cooklev in his testing looked at the R-PRM-LD

12   message during loop diagnostic mode and found that there was

13   multicarrier modulation used.

14   Q.   Can you summarize your opinion regarding the preamble?

15   A.   Yes. Please go to the next slide.

16   And all the accused products meet the claim element 36 of

17   the preamble.

18   Q.   What's the next element of claim 36?

19   A.   Claim element 36[a] is instructions that, when executed,

20   direct the transceiver to receive and initiate diagnostic mode

21   message.

22   Q.   What is your opinion regarding claim element 36[a}?

23   A.   I believe all the accused products meet that claim

24   element.

25   Q.   Did the Court construe any terms for this claim element?

1   A.   Yes, it did.

2   Q.   And what did it construe?

3   A.   Please go to the next slide.

4   The Court construed the term 'transceiver' and construed

5   it to mean communications device capable of transmitting and

6   receiving data where the transmitter portion and receiver

7   portion share at least some common circuitry.

8   Q.   Did you apply the Court's construction in your analysis?

9   A.   Yes, I did.

10   Q.   And what evidence did you rely on?

11   A.   If you'd go to the next slide, please.

12   This is Exhibit 24, which is a block diagram of the

13   BGW210-700, and as I'm showing over here, here is an example

14   of shared circuitry. And what I mean by that is these are two

15   telephone lines that are going in and coming out and you would

16   actually connect into the jack at your home.

17   Q.   And can you identify any of the functions in there?

18   A.   Yes, I can. As an example, there's the RJ14, which is

19   actually the jack that you would plug into in the device, you

20   have some isolators, and you have some -- an analog front end

21   function and chips.

22   Q.   Are there similar block diagrams for the other accused

23   products?

24   A.   Yes, there are.

25   Q.   Did you rely on any other evidence for claim element

```
 1    36[a}?

 2    A.    If you would please go to the next slide.

 3          I've relied on section 12.4 of the VDSL2 standard, which

 4    says, "Loop diagnostic mode shall be entered upon request of

 5    either VTU.  Both VTUs shall support the loop diagnostic

 6    mode."

 7    Q.    And why are you emphasizing the word 'shall'?

 8    A.    If you'd go to the next slide, please.

 9          It says in the standard that terms such as shall and must

10    indicate mandatory requirements that must be met in order to

11    be compliant with the standard.

12    Q.    Do you rely on any other evidence for your opinion

13    regarding claim element 36[a}?

14    A.    Yes, I do.

15    Q.    And what do you rely on?

16    A.    Please go to the next slide --

17          Doctor Cooklev actually looked at the O-MS message where

18    O means it was sent by the office end, and this is the

19    diagnostic mode message, the initiate diagnostic mode message

20    received by the accused device, the CPE.

21    Q.    Can you please summarize your opinion regarding claim

22    element 36[a]?

23    A.    Yes.  Please go to the next slide.

24          All the accused products meet claim element 36[a].

25    Q.    What is the next claim element?
```

1   A.   The next claim element is 36[b].   That is instructions

2   that, when executed, transmit from the transceiver a

3   diagnostic message using multicarrier modulation with DMT

4   symbols that are mapped to one bit of diagnostic message.

5   Q.   What is your opinion regarding claim element 36[b]?

6   A.   All of the accused products meet this claim element.

7   Q.   What evidence do you rely on?

8   A.   Please go to the next slide.

9   So here I have highlighted the transmit from the

10   transceiver a diagnostic message using multicarrier

11   modulation. And I've also highlighted table 12-75, which is a

12   description of the R-PRM-LD message. And that includes the

13   diagnostic information as I'll talk about in just a bit.

14   Q.   And just to be clear, where is table 12-75 coming from?

15   A.   That is coming from the VDSL2 standard.

16   Q.   Do you rely on any other evidence for claim element

17   36[b]?

18   A.   Yes, I do.

19   Q.   What do you rely on?

20   A.   If you go to the next slide, please.

21   I rely on section 12.4.1.1 of the VDSL2 standard, which

22   is the SOC, or special operations channel, mapping of the

23   message during loop diagnostic mode. And it says, as I've

24   highlighted on the bottom, all SOC messages shall be sent

25   using one information bit per DMT symbol.

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```
 1    Q.   And what portion of the claim element 36[b] does this

 2    relate to?

 3    A.   This is the DMT symbols are mapped to one bit of the

 4    diagnostic message, which is, again, like the fog horn I was

 5    talking about previously.

 6    Q.   Do you rely on any other evidence for claim element

 7    36[b]?

 8    A.   Yes, I do.

 9    Q.   And what do you rely on?

10    A.   Please go to the next slide.

11         So for the same portion of the claim element, Doctor

12    Cooklev in his testing identified 8,240 bits, and each DMT

13    symbol that was sent was mapped to one of those bits.

14    Q.   Did you rely on any other evidence for claim element

15    36[b]?

16    A.   Yes, I did.

17    Q.   What did you rely on?

18    A.   Please go to the next slide.

19         And in this slide, Doctor Cooklev has analyzed the source

20    code.  Of course, he found the message -- the code that

21    generates the R-PRM-LD message.  He also found the code that's

22    called extract one bit, which extracts one bit from the

23    message and puts it in the DMT symbol.

24    Q.   Can you summarize your opinion for claim element 36[b]?

25    A.   Yes, I can.  Please go to the next slide.
```

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1   All of the accused products meet this claim element.

2   Q.   What's the next claim element?

3   A.   The next claim element is 36[c]. That's "wherein the

4   diagnostic message comprises a plurality of data variables

5   representing the diagnostic information about the

6   communications channel".

7   Q.   And what is your opinion regarding claim element 36[c]?

8   A.   All of the accused products meet this claim element as

9   well.

10   Q.   What did you rely on?

11   A.   Please go to the next slide.

12   So for this claim element, I've again relied on table

13   12-75 describing the R-PRM-LD message from the VDSL2 standard.

14   And I've highlighted fields 13 and 14 which under -- in

15   section 11.4.1 are the HNQLN parameters, which are called the

16   detailed diagnostic information. So that's the diagnostic

17   information, and it's a plurality of data variables. So

18   there's more than one.

19   Q.   And are these data variables included with the R-PRM-LD

20   message?

21   A.   Yes, they are, as shown in fields 13 and 14.

22   Q.   Did you rely on any other evidence to support your

23   opinion?

24   A.   Yes, I did.

25   Q.   What did you rely on?

1   A.   Please go to the next slide.

2   I relied again on Doctor Cooklev's source code analysis

3   where he found the code generates the R-PRM-LD message.

4   Q.   And, again, would those diagnostic variables be included

5   in that R-PRM-LD message?

6   A.   Yes. As shown from the previous slide, table 12-75

7   contains those variables.

8   Q.   Can you summarize your opinion regarding claim element

9   36[c]?

10   A.   Yes, I can. Please go to the next slide.

11   So all of the accused products meet this claim element.

12   Q.   What's the next element of claim 36?

13   A.   That's claim element 36[d]. That's "wherein one variable

14   comprises an array representing frequency domain received idle

15   channel noise information".

16   Q.   What is your opinion regarding claim element 36[d]?

17   A.   I believe all the accused products meet this claim

18   element.

19   Q.   Did the Court construe any terms related to claim element

20   36[d]?

21   A.   Yes, it did.

22   Q.   What did the Court construe?

23   A.   Please go to the next slide.

24   The Court construed an array representing frequency

25   domain received idle channel noise information and construed

1   it to mean "an ordered set of values representative of noise

2   in the frequency domain that was received by a transceiver on

3   respective sub-channels in the absence of a transmission

4   signal on a received channel."

5   Q.   Did you apply the Court's construction in your analysis?

6   A.   Yes, I did.

7   Q.   What evidence did you rely on?

8   A.   Please go to the next slide.

9   So here I'm relying on just field 13, which is the quiet

10   line channel noise in the table 12-75 of the VDSL2 standard.

11   And field 13 says that, first of all, they're transmitted in

12   ascending order. So that's an ordered set of variables or

13   values.

14   And I also rely on section 11.4.1.1.2 of the quiet -- of

15   the VDSL2 standard that says that the noise level is measured

16   when there is no VDSL2 symbols -- signals are present on the

17   loop. That's what it says at the bottom.

18   Q.   And how does that portion of the VDSL2 standard relate to

19   the claim element?

20   A.   So that relates to the -- again, to the idle channel

21   noise because it requires that there is an absence of

22   transmission signal received, according to the Court's

23   construction.

24   Q.   Did you rely on any other evidence for claim element

25   36[d]?

1   A.   Yes, I did.

2   Q.   What did you rely on?

3   A.   Please go to the next slide.

4   Doctor Cooklev in his testing looked at the R-PRM-LD

5   message and saw that the QLN variable, which is the quiet line

6   noise or, as required by the claim, the idle channel noise

7   information, was sent as an array.

8   Q.   Did you rely on any other evidence for claim element

9   36[d]?

10   A.   Yes, did.

11   Q.   What did you rely on?

12   A.   Please go to the next slide.

13   I relied on Doctor Cooklev's analysis of the R-PRM-LD

14   message code, and he also identified the code that fills the

15   array in with the quiet line noise measurements.

16   Q.   Can you summarize your opinion regarding claim element

17   36[d]?

18   A.   Yes. Please go to the next slide.

19   All the accused products meet claim element 36[d].

20   Q.   And can you summarize your overall opinion regarding

21   claim 36 of the '686 Patent?

22   A.   Yes. Since there's green checkmarks in all the boxes

23   under accused products, all the accused products infringe

24   claim 36 of the '686 Patent.

25   Q.   What other patent are you here to discuss today?

1   A.   I'm here to discuss the ROC, R-O-C, patent, also known as

2   the '354 Patent.

3   THE COURT: Let me interrupt. Before we go on to

4   the next patent, it's been over two and a half hours since we

5   came back from lunch -- or actually it's been an hour and a

6   half, but I think we ought to take a short recess at this

7   point. So this seems like a fair place to break for a short

8   recess.

9   I'm going to ask the ladies and gentlemen of the jury to

10   simply close their notebooks and leave them in their chairs,

11   don't discuss the case among yourselves, follow all my

12   instructions, and we'll be back shortly.

13   Use this opportunity, ladies and gentlemen, to stretch

14   your legs, get a drink of water, and we'll be back to continue

15   with this direct examination in a few minutes.

16   The jury's excused for recess.

17   (Whereupon, the jury left the courtroom.)

18   THE COURT: Counsel, I'll try to keep this to 10 or

19   12 minutes. Court stands in recess.

20   (Brief recess.)

21   THE COURT: Be seated, please.

22   Counsel, are you prepared to continue with your direct

23   examination?

24   MS. RATYCZ: Yes, Your Honor.

25   THE COURT: All right. Let's bring in the jury,

1   please.

2   (Whereupon, the jury entered the courtroom.)

3   THE COURT: Welcome back, ladies and gentlemen.

4   Please be seated.

5   We will continue with the direct examination of the

6   witness by Plaintiff's counsel.

7   Ms. Ratycz, you may continue.

8   Q.   (BY MS. RATYCZ) Doctor Brody, what other patent are you

9   here to testify about today?

10   A.   I am here to testify about the '354 Patent, which is also

11   known as the ROC patent.

12   Q.   And what is the title of the ROC patent?

13   A.   If you look at this slide, you'll see that it says,

14   "Systems and Methods for a Multicarrier Modulation System with

15   a Variable Margin."

16   Q.   And what does the ROC patent relate to?

17   A.   As I've highlighted below, it says, "This invention

18   relates to multicarrier modulation systems having multiple

19   margins."

20   Q.   What do you mean when you say the word 'margin'?

21   A.   I'm talking about an SNR margin or signal-to-noise ratio

22   margin.

23   Q.   What is the SNR margin?

24   A.   This is a term construed by the Court. And the Court

25   construed the term, and I've underlined the very beginning, "A

1   parameter used in determining the number of bits allocated to

2   each of a plurality of carriers, where the value of the

3   parameter specifies an extra SNR requirement assigned per

4   carrier in addition to the SNR required to maintain a

5   specified bit error rate for the communication link at a

6   specified bit allocation."

7   Q.   Can you explain the role of SNR in bit allocation?

8   A.   Yes, I can. Please go to the next slide.

9   So in this slide we're showing that signal-to-noise ratio

10   of 24 on a particular frequency, that's 24 decibels. And

11   because there's a rule of thumb that you roughly use 8dB per

12   bit, you can assign 8 bits to that carrier.

13   Q.   How many dB do you use per bit?

14   A.   I use 3db per bit.

15   Q.   What would happen if a noise on this channel

16   significantly increases?

17   A.   Go to the next slide, please.

18   If the noise increases, the signal-to-noise ratio

19   decreases. Therefore, it may drop from 24 to 21 decibels. In

20   that case, you may lose in this case the last bit, as shown by

21   an X. So you only get 7 bits instead of 8.

22   Q.   Where does the SNR margin come into play?

23   A.   If you go to the next slide, please.

24   The SNR margin is like a bit of wiggle room or a cushion,

25   if you will, that you take away from the signal-to-noise

1   ratio. In this case, I'm showing a 6dB margin that I'm taking

2   away from 24 decibels to leave 18 decibels. 18 divided by the

3   3 decibels per bit means I only put 6 bits on the carrier now.

4   Q.   And using this example, what would happen if the noise on

5   the channel substantially increases?

6   A.   Please go to the next slide.

7   So, again, the increase in noise will cause a decrease in

8   the signal-to-noise ratio. However, that drop to 21 will not

9   lose the bit because we've allowed a 6 dB margin which only

10   puts 6 bits on the frequency.

11   Q.   How do you intend to explain your opinions regarding the

12   '354 Patent?

13   A.   Please go to the next slide.

14   MS. RATYCZ: Actually, Mr. Diaz, could we have slide

15   No. 67?

16   THE WITNESS: As I did for the '686 Patent, I will

17   be putting checkmarks in boxes for each claim element. And

18   now I have two columns on the right because I have two

19   theories of infringement--one, VDSL2, and the other one, VDSL2

20   plus the G.INP standard.

21   Q.   Did the Court construe any terms relevant to claim 10?

22   A.   Yes, it did. Please go to the next side.

23   So the Court construed transceiver, which we already

24   discussed in the '686 Patent.

25   It construed "operable to", which is highlighted in

1   green, to mean "configured to".

2   It construed SNR margin, which shows up in many places

3   which we already discussed.

4   And the last claim element, "wherein the first SNR margin

5   provides a more robust reception than the second SNR margin",

6   it construed to mean, "wherein the first SNR margin is greater

7   than the second SNR margin."

8   Q.   Did you apply the Court's construction for all of these

9   terms in your analysis of claim 10?

10   A.   Yes, I did.

11   Q.   What evidence did you rely on for your VDSL2 infringement

12   theory?

13   A.   Please go to the next slide.

14   I relied again on numerous pieces of evidence. The VDSL2

15   standard, documents and deposition testimony saying the

16   accused documents comply with that standard, and the source

17   code analysis done by Doctor Cooklev.

18   Q.   What is the first element of claim 10?

19   A.   So the first element is a "multicarrier communications

20   transceiver operable to." And I've gone to essentially the

21   first page of the VDSL2 standard that, again, says it's only

22   specifies a discrete multitone modulation, which means it's

23   multicarrier.

24   Q.   Can you summarize your opinion regarding the preamble?

25   A.   Yes. All the accused products meet the preamble under

1   the VDSL2 theory of infringement.

2   Q.   What is the next claim element?

3   A.   The next claim element, 10[a], is receive a multicarrier

4   symbol comprising a first plurality of carriers and a second

5   plurality of carriers.

6   Q.   What is your opinion regarding claim element 10[a] All

7   the accused products meet this claim element

8   Q.   And what did you rely on?

9   A.   Please go to the next slide.

10   I relied on figure 9-6 of the VDSL2 standard, which

11   describes you get two sets of bits, which are the L0 bits and

12   the L1 bits, and they are combined in a data frame. And these

13   are called two latency paths. And that data frame later

14   becomes what's transmitted to the DMT symbol.

15   Q.   What else did you rely on for claim 10[a]?

16   A.   Please go to the next slide.

17   I relied on section 9.1 that says that there is a single

18   latency with ROC mode. And it says, when that single latency

19   mode is used, the VTU will have the data on path 1 and the ROC

20   the robust overhead channel, will be on latency path 0.

21   Q.   If single latency with ROC mode is enabled, how will it

22   be implemented?

23   A.   Well, again, it's using the word the data 'shall' use,

24   and the ROC 'shall' use. So, again, it's mandatory that when

25   the single latency with ROC mode is enabled, it's performed

```
 1    that way.

 2    Q.   What else did you rely for claim element 10[a]?

 3    A.   Please go to the next slide.

 4         So this is just the description of the robust overhead

 5    channel that is in the VDSL2 standard.

 6    Q.   And what section is this from?

 7    A.   This is from section 9.5.3.1.

 8    Q.   What other evidence did you rely on?

 9    A.   Please go to the next slide.

10         So here I've relied on section 9.5.3.2 of the VDSL2

11    standard, and as I've highlighted below on the bottom, when

12    single latency with ROC mode is enabled, the L0 bits shall not

13    share the same carriers as the L1 bits.

14         So you have the L0 bits on the ROC shall not use the same

15    carriers as the L1, or user, bits that are on different

16    carriers.

17    Q.   What else did you rely on?

18    A.   Go to the next slide, please.

19         I relied on Doctor Yu's testimony, and he testified that

20    the 63X68 and the 63148 support the single latency with ROC

21    mode on those chips.

22    Q.   And what else do you rely on?

23    A.   Please go to the next slide.

24         I relied on Doctor Cooklev's source code analysis where

25    he said that the carriers with the best SNR, signal-to-noise,
```

1   ratio were assigned to the ROC where the other carriers were

2   assigned to the latency path 1, the non-ROC carriers.

3   Q.   Can you summarize your opinion for claim element 10[a]?

4   A.   Yes, I can. All the accused products meet this claim

5   element.

6   Q.   What is the next claim element?

7   A.   The next claim element is 10[b], receive a first

8   plurality of bits on the first plurality of carriers using a

9   first SNR margin.

10   Q.   And what is your opinion regarding claim element 10[b]?

11   A.   All of the accused products meet this claim element as

12   well.

13   Q.   And what do you rely on?

14   A.   Please go to the next slide.

15   So in this slide for the first plurality of bits on the

16   first plurality of carriers -- now, remind you, I showed you

17   there was the first plurality of carriers, which is the ROC,

18   that the ROC uses -- has parameters that are defined by 6 and

19   10. And field 10 tells you to go look at table 12-58. And

20   that's -- the 12-64 is the RPM-S message on the left and the

21   VDSL2 standard, and 12-58 is the table with the ROC

22   descriptor.

23   And the ROC descriptor at Octet 5 and 6 was field L,

24   contains L for the ROC where L is the numbers of bits. So

25   that's the first plurality of bits on the first carrier.

1   Q.   What other evidence did you rely on?

2   A.   Please go to the next slide.

3   Doctor Cooklev found that -- he found the code that

4   generates the RPM-S message and found the function called is

5   ROC tone, which says if a carrier is in the ROC or a carrier

6   is not in the ROC.

7   Q.   Did you rely on anything else for claim element 10[b]?

8   A.   Yes, I did. The next slide shows I relied on the message

9   called the 0Msg1 message, which is from table 12-49 of the

10   VDSL2 standard, and it basically says in describing field 22

11   that field 22, which will be the target for the SNR.m for the

12   ROC, will be the sum of the target SNR.m in field 2 plus the

13   SNR.m offset for the ROC in field 22.

14   Q.   And which portion of the claim element does this relate

15   to?

16   A.   This relates to using a first SNR margin.

17   Q.   What other evidence do you rely on for claim element

18   10[b]?

19   A.   Please go to the next slide.

20   The standard -- the VDSL2 standard defines in section

21   11.4.1.1.6.4 a signal-to-noise ratio for the ROC.

22   Q.   What other evidence do you rely on for claim element

23   10[b]?

24   A.   Please go to the next slide.

25   Doctor Cooklev in his code analysis, he said the

```
 1    carrier -- that the carriers with the best SNR go to the ROC

 2    and the other carriers go to latency path 1.  He also

 3    identified that the bits that were put on the ROC were

 4    determined using that SNR.m offset.

 5    Q.   Can you summarize your opinion for claim element 10[b]?

 6    A.   Yes.  Under the VDSL2 theory of infringement, all the

 7    accused products meet this claim element.

 8    Q.   What is the next claim element?

 9    A.   The next claim element is 10[c], which receive a second

10    plurality of bits on the second plurality of carriers using a

11    second SNR margin.

12    Q.   What is your opinion regarding claim element 10[c]?

13    A.   Again, all the accused products meet this claim element.

14    Q.   And what do you rely on?

15    A.   Please go to the next slide.

16         And as you can see, now for receive a second plurality of

17    bits on the second plurality of carriers, I've pointed to

18    field 7 of the R-PMS message and the VDSL2 standard.  And that

19    is the latency path 1 descriptor.  And the latency path 1

20    descriptor is defined in table 12-57, and it says it contains

21    the value of L for the latency path.  So this is the second

22    plurality of bits because it's on latency path 1.

23    Q.   What other evidence do you rely on?

24    A.   Please go to the next slide.

25         In this case I look again at the oMsg1 message in table
```

1   12-49 of the VDSL2 standard. And in this case, using a second

2   SNR margin, the target that it forms the basis for that margin

3   is only field 2.

4   Q.   And what is field 2?

5   A.   Field 2 is the target SNR margin in the downstream

6   direction.

7   Q.   And what other evidence do you rely on?

8   A.   Please go to the next slide.

9   In section 11.4.1.1.6.2, the VDSL2 standard defines the

10   signal-to-noise ratio margin independent of the ROC.

11   Q.   What other evidence do you rely on?

12   A.   Please go to the next slide.

13   Doctor Cooklev, besides identifying two different sets

14   carriers, also identifies that the bits that are determined

15   for the non-ROC carriers do not use the SNR.m offset.

16   Q.   Can you summarize your opinion for claim element 10[c]?

17   A.   Yes, please go to the next slide.

18   What I've shown here is that under the VDSL2 theory of

19   infringement, all the accused products meet this claim

20   element.

21   Q.   What is the next claim element?

22   A.   The next claim element is 10[d], wherein a first

23   plurality of carriers is different than the second plurality

24   of carriers.

25   Q.   And what is your opinion regarding claim element 10[d]?

1   A.   All the accused products meet this claim element.

2   Q.   And what do you rely on?

3   A.   I rely on section 9.5.3.2 of the VDSL2 standard that

4   states, as I've highlighted, when single latency with ROC mode

5   is enabled, the L0 bits shall not share the same sub-carriers

6   as the L1 bits. So you know that there are two sets of

7   carriers and they have to be different.

8   Q.   What other evidence do you rely on?

9   A.   Please go to the next slide.

10   Doctor Cooklev in his source code analysis found that his

11   ROC tone is returned true for the ROC carriers and return

12   false for the non-ROC carriers. Therefore, the carriers, the

13   two pluralities, are different.

14   Q.   Can you summarize your opinion for claim element 10[d]?

15   A.   Yes. All the accused products meet claim element 10[d].

16   Q.   And what is the next claim element?

17   A.   Next claim element is 10[e], wherein the first SNR margin

18   is different than the second SNR margin.

19   Q.   What is your opinion regarding claim element 10[e]?

20   A.   All of the accused products meet this claim element as

21   well.

22   Q.   What evidence do you rely on?

23   A.   In this slide, as I show you, I've again highlighted

24   10-49, that table of the oMsg1 message which is in the VDSL2

25   standard. And there is a first SNR margin that is

1   the -- based on the TarSNR.m plus the SNR.m offset ROC. And

2   there is a second SNR margin which is just based on the

3   TarSNR.m. Therefore, the two are different.

4   And also because the first SNR margin contains the SNR.m

5   offset ROC is also greater than just the second SNR margin.

6   Q.   What other evidence did you rely on?

7   A.   Please go to the next slide.

8   Doctor Cooklev determined that the second SNR margin does

9   not use the SNR offset ROC when it determines the bits for the

10   second plurality of carriers.

11   Q.   And what does that mean?

12   A.   That means that the -- again, the -- essentially the

13   first SNR margin, which includes SNR.m ROC, is different and

14   larger than the second SNR.m margin.

15   Q.   Can you summarize your opinion for claim element 10[e]?

16   A.   Yes. Under the theory of VDSL2, all the accused products

17   meet that claim element.

18   Q.   What is the last claim element?

19   A.   The last claim element is 10[f], wherein the first SNR

20   margin provides a more robust reception than the second SNR

21   margin.

22   Q.   And what does that mean, to provide a more robust

23   reception?

24   A.   As the Court construed, it means that the first SNR

25   margin must be greater than the second SNR margin.

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1    Q.    What is your opinion regarding claim element 10[f]?

2    A.    This claim element is met by all the accused products for

3    the same reasons I showed you in the previous slide.

4    Q.    Can you summarize your opinion regarding claim [f]?

5    A.    Yes.  Please go to the next slide.

6          In the next slide, we see that claim element 10[f] is met

7    by all the accused products.

8    Q.    And what is your overall opinion under your first

9    infringement theory?

10   A.    Since each box is checked under the VDSL2 theory of

11   infringement, all the accused products infringe the claim 10

12   of the '354 Patent under that theory.

13   Q.    How does your second infringement theory differ from the

14   first?

15   A.    If you go to the next slide, please.

16         We've now or are also implementing G.INP along with

17   VDSL2.  And if we look at the G.INP standard at section

18   C-1- -- .1.2, it says that when the ROC is enabled, the

19   overhead channel shall use the ROC as specified in VDSL2.  So

20   when the ROC is enabled, G.INP works the same way as VDSL2.

21         But it also says, in the second highlight, if the ROC is

22   disabled or either VTU does not support the ROC, it still uses

23   the ROC.

24   Q.    And what does that mean for purposes of infringement?

25   A.    It means that whether the ROC is enabled, if G.INP is
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1   being implemented, the accused products infringe the claim.

2   Q.   Do you have any additional evidence for the second

3   infringement theory?

4   A.   Yes, I do. Please go to the next slide.

5   This Doctor Yu's testimony, he said that 63148 chip and

6   the 63X68 chips all implemented G.INP.

7   Q.   Does the BCM6368 set support G.INP?

8   A.   Yes, it does.

9   Q.   What do you base that on?

10   A.   Doctor Cooklev, in reviewing all the firmware for all the

11   chips, found that all the chips implemented G.INP.

12   Q.   Did you rely on any additional evidence for this

13   infringement theory?

14   A.   Yes, I did.

15   Q.   What did you rely on?

16   A.   I relied on the testing of Doctor Cooklev. Doctor

17   Cooklev generated this chart from his test results. And what

18   he's done is he's put a -- basically a blue box around the

19   first 10 carriers, and those 10 carriers are the ROC. And

20   he's estimated that the ROC uses a signal-to-noise ratio

21   margin of 30. That's the first signal-to-noise ratio margin.

22   Q.   And did Doctor Cooklev identify a second plurality of

23   carriers?

24   A.   Yes. Please go to the next slide.

25   So in this slide, on the next group of carriers, the next

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 1    plurality, as shown in the blue box, he's estimated that these

 2    carriers use a margin -- an SNR margin of 6dB.

 3    Q.   Now, Doctor Brody, if the offset value for the ROC is

 4    zero, does that change your opinion regarding whether the

 5    accused products infringe under either of your infringement

 6    theories?

 7    A.   No, it does not.

 8    Q.   And why not?

 9    A.   Well, if you go to the next slide, this is channel

10    initialization policies with ROC, and it comes from section

11    12.3.7.1 from the VDSL2 standard.

12         And I've highlighted step 3, which says, you maximize the

13    SNR margin for the ROC above TarSNR.m for the ROC.  So even if

14    it equals the TarSNR.m for non-ROC carriers, you still

15    maximize the ROC above that.

16         I also note in the bottom highlight that this channel

17    initialization policy is mandatory.

18    Q.   Can you summarize your infringement opinions for claim 10

19    of the '354 Patent?

20    A.   Yes.  Please go to the next slide.

21         As I've shown, all the boxes are checked under the theory

22    of infringement for VDSL2 plus G.INP.  So under both theories

23    of infringement, all accused products infringe claim 10 of the

24    '354 Patent.

25    Q.   Thank you, Doctor Brody.
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 1              MS. RATYCZ:  I pass the witness.

 2              THE COURT:  Cross-examination?

 3              MR. STEVENS:  Yes, Your Honor.

 4              THE COURT:  All right.

 5              MR. STEVENS:  Could we have a moment to pass out

 6    binders?

 7              THE COURT:  You may distribute binders.  Give them

 8    to the CSO, please.

 9         I tell the lawyers not to spare the paper.  We grow pine

10    trees in East Texas.

11         All right, Mr. Stevens.  You may proceed with

12    cross-examination.

13              MR. STEVENS:  Thank you, Your Honor.

14                        CROSS EXAMINATION

15    BY MR. STEVENS:

16    Q.   Good afternoon, Doctor Brody.

17    A.   Good afternoon.

18    Q.   I don't think we've had a chance to meet before.  My name

19    is Scott Stevens.  I'm one of the lawyers representing

20    CommScope in this action.  It's nice to meet you.

21         I heard you work for A.T. Brody & Associates.  Is that

22    right?

23    A.   That is correct.

24    Q.   And these days all of the actual revenue you generate

25    comes from litigation services.  Is that right?
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1   A.   At this point in time, yes.

2   Q.   Okay. And you've not personally designed a hardware or

3   software of any type of multicarrier transceiver. Is that

4   right?

5   A.   No, I have not.

6   Q.   Okay. And in your work in this case, you didn't

7   personally test any product. Is that right?

8   A.   No, I did not. Doctor Cooklev tested them.

9   Q.   And you didn't look yourself at any source code in this

10 case. Is that right?

11 A.   No. I only looked at the source code that Doctor Cooklev

12 included in his report.

13 Q.   Okay. So everything that you just discussed about the

14 graphs or any source code with your counsel, that's not work

15 that you did; you're relying on someone else's work. Is that

16 fair?

17 A.   I'm relying on someone else's work and, of course, my 40

18 years of experience in telecommunications.

19 Q.   Understood. Now, every product that you accused uses a

20 Broadcom chipset. Is that right?

21 A.   Yes.

22 Q.   I was keeping track. I don't think I heard you say the

23 word Broadcom at any point in time in your direct testimony.

24 Is that right?

25 A.   I think that's incorrect.

1   Q.   Okay. Well, I'm sorry if I missed it.

2   Doctor Yu, the gentleman that you showed a few times, he

3   works for Broadcom. Is that right?

4   A.   That's correct.

5   Q.   And every bit of source code that you showed throughout

6   your hundred or so slides, that's all Broadcom source code.

7   Is that fair?

8   A.   It's code that's used by CommScope that they get from the

9   chip, yes.

10   Q.   Sir, source code, that's Broadcom's. CommScope doesn't

11   get their source code, do they?

12   A.   CommScope -- I don't understand the question.

13   Q.   There's a difference between source code and executable

14   code. Is that right?

15   A.   Source -- yes. You cannot execute source code. You have

16   to compile it, you have to link it, you have to put it in the

17   product.

18   Q.   And so the source code that you looked at, that's all

19   something that belongs to Broadcom. That's Broadcom's

20   property. Fair?

21   A.   It was written by Broadcom, yes.

22   Q.   Okay. You didn't show these eight folks any CommScope

23   source code; you only showed them Broadcom source code. Is

24   that fair?

25   A.   I think so.

1   Q.   Okay. Now, let's pull up your slide 25, PDX.Brody.25.

2   And this is claim 36 of the '686 Patent, and it goes through a

3   whole bunch of different instructions. Do you see the word

4   'instructions' there several times?

5   A.   Yes.

6   Q.   Okay. And the instructions that you're pointing to are

7   Broadcom source code. Is that right?

8   A.   Yes.

9   Q.   Okay. Now, if we look at PDX.Brody.67, and this is claim

10   10 of the '354 Patent. Do I have that right, sir?

11   A.   Yes, you do.

12   Q.   Okay. And, again, all of the code that does each one of

13   these steps that -- that you pointed to, all that's Broadcom

14   source code. Is that right?

15   A.   That's correct.

16   Q.   Okay.

17   MR. STEVENS: We can take that down.

18   Q.   (BY MR. STEVENS) Now, the Broadcom chip, the chip itself

19   includes a transceiver. Is that right?

20   A.   The whole product is a transceiver.

21   Q.   The Broadcom chip itself includes a transceiver. Is that

22   right?

23   A.   Yes, it does.

24   Q.   Okay. So as it ships out of the Broadcom factory,

25   wherever that may be, before it's delivered to CommScope,

1   there's a transceiver on that chip. Is that right?

2   A.   I believe so.

3   Q.   Okay. And that chip has memory on it. Is that right?

4   A.   I'd have to go and check if it's -- if the instructions

5   are downloaded from external memory that's also provided.

6   Q.   Okay. The Broadcom chipset, sir, has some memory that

7   its processor uses. Is that right? It has a cache at the

8   very least.

9   A.   It has some memory, yes.

10   Q.   Okay. And the Broadcom chipset has a processor that does

11   all that work with the code. Is that right?

12   A.   Yes.

13   Q.   All right. So the Broadcom chip, processor, memory, and

14   transceiver are all on that chip. Fair?

15   A.   Yes.

16   Q.   Okay. Now, those Broadcom chips, they can do a whole

17   bunch of other things. Right? Other than DSL. Is that fair?

18   A.   Which chip are you talking about?

19   Q.   Well, we can take a look at the slide you put up because

20   you grouped the products in different colors based upon the

21   Broadcom chip that they had. Did I -- did I see that right on

22   your slide, sir?

23   A.   Yes.

24   Q.   Okay.

25   THE COURT: Mr. Stevens, could you slow down just a

1 little bit?

2   MR. STEVENS: I'm happy to, Your Honor.

3   THE COURT: Please do.

4 Q.   (BY MR. STEVENS) Each of those chips, those three chips

5 that you put on the color-coded chart, each of those also have

6 the functionality to work as an ethernet switch. Is that

7 right?

8 A.   I'd have to go and check the Broadcom data sheet.

9 Q.   Okay. Do you know whether each one of those can work as

10 a -- as a WiFi device?

11 A.   They might be able to, but, again, I'd have to check.

12 Q.   Do you know that some of those actually can also work as

13 a fiber gateway for fiberoptic communication?

14 A.   I was not aware of that.

15 Q.   Okay. And then you mentioned one other thing. You

16 mentioned a jack. The jack you mentioned, that's just a jack

17 that a telephone cord plugs into. Is that right?

18 A.   Right. When you have a CPE device, you have your

19 telephone cord, one end goes in the wall and one end goes into

20 the unit.

21 Q.   Fair enough. And that jack is a passive component. It

22 doesn't have intelligence running source code or instructions.

23 Is that right?

24 A.   I believe that's correct.

25 Q.   The jack is just literally four little connectors. Is

1   that fair?

2   A.   It's a little more complicated than that. I think

3   they're using an RJ 45, which has a couple of pairs in it.

4   Q.   But all they do is they connect one side of the jack to

5   the other side. Is that right?

6   A.   Right. And there were other things that I circled there

7   as well that have active components.

8   Q.   All right. So let's discuss claim 36 of the '686 Patent.

9   Is that okay?

10   A.   Sure.

11   Q.   All right. The '686 Patent has a total of 41 claims.

12   Right?

13   A.   I believe so.

14   Q.   And you talked about just one of them. Is that fair,

15   sir?

16   A.   Yes.

17   Q.   And I heard reference to a quiet line noise test. Is

18   that right? Or idle channel noise, I think you also said?

19   A.   Well, in the standard, it's quiet line noise which is the

20   idle channel noise in the claim language.

21   Q.   Okay. So the claim uses different language than the

22   standard. Is that fair?

23   A.   Which often happens, yes.

24   Q.   Okay. And that test, when I'm testing for quiet line

25   noise or idle channel noise, I'm just listening to hear

```
1    whatever's on the line.  That's what that test is.  Is that

2    right?

3    A.    You're listening to hear whatever noise is on the line,

4    yes.

5    Q.    Right.  I remember when I was a child, my mom got mad at

6    me, but I liked to put my ear on a railroad track to see if I

7    could hear how far a train was away.  That's the same concept.

8    Right?  I'm not sending any data.  I'm just listening to hear

9    whatever else is on the line.

10   A.    Right.  I wouldn't say that it tells you how far anything

11   is away, like putting your ear to a railroad track.

12   Q.    Well, I was smart enough to get up pretty quickly.  But

13   at any rate, the test that we're talking about all, we're

14   doing is listening to just hear whatever might be on the line.

15   That's the whole test.

16   A.    Yes.  You're listening to what may be on the line.

17   Q.    Okay.  And that same test happens during the normal

18   start-up process, is that fair, of a DSL product?

19   A.    I believe so.

20   Q.    Okay.  So you don't have to do this special loop

21   diagnostic mode to run that test.  That exact same test occurs

22   every time someone starts up a DSL modem.  Fair?

23   A.    I believe you check for noise, yes.

24   Q.    Okay.  Do you know in AT&T's network -- well, did you

25   hear a few days ago or on Friday, there was a suggestion that
```

1   over 90 percent of CommScope's products go into the AT&T

2   network? Were you in the courtroom for that?

3   A.   I don't know if it's 90 percent, but I know they're the

4   largest customer, yes.

5   Q.   Does AT&T actively use loop diagnostic mode in its

6   network? Is that a test that they run?

7   MS. RATYCZ: Objection, Your Honor.

8   THE COURT: What's your objection, counsel?

9   MS. RATYCZ: It's -- this is one of your motions in

10   limine.

11   THE COURT: Well, tell me which one you're talking

12   about. The parties raise motions, the Court enters orders so

13   there's a limine order. If there is, specify it for me.

14   MS. RATYCZ: Yes. TQ Delta's motion in limine No.

15   5.

16   THE COURT: Is there a TQ Delta motion in limine 5?

17   I see a 1 and 2. I see a CommScope 5, and then there are 25

18   standing limine orders the Court's entered.

19   MS. RATYCZ: Your Honor, may I approach?

20   THE COURT: Approach the bench.

21   (The following was had outside the hearing of the

22   jury.)

23   MS. RATYCZ: Motion --

24   THE COURT: Tell me what --

25   MS. RATYCZ: I'm sorry. Tell me what your issue is.

1   THE COURT: Go ahead.

2   MS. RATYCZ: Motion in limine No. 5 relates to this

3   idea of actual operation or actual use, and CommScope has

4   represented they're not going to be making that argument.

5   So it seems like what the testimony is about to elicit is

6   talking about actual use of the products by AT&T and whether

7   or not they are actually used. And that really has nothing to

8   do with infringement here because these are apparatus claims,

9   these are not method claims. And the thing is necessary for

10   us to provide, you know, any analysis of actual use of these

11   products by anyone.

12   THE COURT: Okay. Notwithstanding the substance of

13   your objection, you believe that there is a TQ Delta MIL No. 5

14   that was granted by the Court?

15   MS. RATYCZ: The MIL was denied, but there was some

16   commentary by the Court.

17   THE COURT: That's what I thought.

18   What's your response to this, Mr. Stevens?

19   MR. STEVENS: I'm not going to suggest it has

20   anything to do with non-infringement. But as Mr. Davis said

21   in opening, you use more, you pay more; you use less, you pay

22   less. It is very relevant to damages and evaluation of these

23   patents whether this feature is actually used in the real

24   world at any point in time.

25   THE COURT: Well, given that there's not a granted

1   limine order in place, and given that Defense counsel's

2   represented he's not going to suggest it goes to the

3   infringement issue, I think it can be dealt with fairly on

4   cross-examination. I'm not going to curtail the scope of the

5   cross -- or it can be dealt with on redirect. I am not going

6   to curtail the scope of the cross.

7   MS. RATYCZ: Okay. Thank you, Your Honor.

8   MR. STEVENS: Thank you, Your Honor.

9   THE COURT: So the motion is denied.

10   (The following was had in the presence and hearing

11   of the jury.)

12   THE COURT: All right. Let's proceed, please.

13   MR. STEVENS: Thank you, Your Honor.

14   Q.   (BY MR. STEVENS) Before we took that break, sir, I asked

15   you, do you know whether AT&T actually uses the loop

16   diagnostic mode test in its network?

17   A.   I'm not aware of that, but I believe there was some

18   testimony to it.

19   Q.   Okay. So if I heard you right, you're not aware of

20   whether AT&T actually uses the loop diagnostic mode test in

21   its network. Did I hear that right, sir?

22   A.   I have no personal knowledge, no.

23   Q.   Okay. So when you talked about truck rolls, you don't

24   have any data to suggest that this has saved even one truck

25   roll in AT&T's actual network. Is that fair?

```
1    A.    That's not true.

2    Q.    Okay.  How many truck rolls has it saved?  Do you have

3    any data that tells me that?

4    A.    No.  I have my experience in telecommunications and

5    provided consulting services to call centers where truck rolls

6    were trying to be prevented for a variety of reasons, not just

7    DSL.  And based on that, I know that AT&T, just like Comcast

8    or any other person, tries to solve your problem with you in

9    the house working with you first or working with their test

10   systems before they send someone to your house.

11   Q.    And I'm sure that's true, sir, but we're here to talk

12   about loop diagnostic mode.  You appreciate that there's other

13   testing parameters that happen in a DSL connection.  True?

14   A.    Right.  But --

15   Q.    So, sir, my question is very simply, do you have any data

16   to suggest how many truck rolls loop diagnostic mode as

17   opposed to some other diagnostic test has ever saved at AT&T?

18   A.    No, I do not.

19   Q.    Okay.  Thank you, sir.

20         And just to be clear, Aware did not invent the consent of

21   idle channel noise testing.  True?

22   A.    No.  They invented the concept of being able to transmit

23   that from one of the -- from the CPE to the central office.

24   Even though the CPE may have measured the noise, it never

25   transmitted the noise.
```

1   MR. STEVENS: Your Honor, I object as

2   non-responsive.

3   THE COURT: Well, the witness answered the question

4   when he said no. The rest of the response was beyond what the

5   question called for, so I'm going to sustain the objection and

6   strike the testimony after the word 'no'.

7   Let's proceed.

8   MR. STEVENS: Thank you, Your Honor.

9   If we can bring up DDX 9.1, please. There we go.

10   Q.   (BY MR. STEVENS) So, sir, on the -- on the left, we have

11   claim 36, and that's the one that you were talking about in

12   your direct testimony. Right?

13   A.   Yes.

14   Q.   And on the claim on the right is claim 1 which is a

15   different claim that you didn't talk about from the same

16   patent. Do you understand that, sir?

17   MS. RATYCZ: Objection, Your Honor.

18   THE COURT: State your objection, counsel.

19   MS. RATYCZ: I believe that he's trying to get our

20   expert to engage in claim construction here.

21   THE COURT: Response?

22   MR. STEVENS: I don't intend to do that. I'm just

23   pointing out that the words are different and the words of the

24   standard are different than the words of the claim that's

25   asserted in this case, Your Honor.

1   THE COURT: All right. The objection is overruled.

2   Q.   (BY MR. STEVENS) Sir, claim 36 on the left, one of the

3   things that it says is that symbols are mapped to one bit. Do

4   you see that? On the asserted claim, the claim that you

5   talked about, says symbols are mapped to bits. Is that right?

6   A.   It says DMT symbols that are mapped to one bit of the

7   diagnostic message.

8   Q.   Okay. That's different than the language of claim 1 that

9   says, each bit is mapped to a symbol. Is that correct, sir?

10   A.   The language in claim 1 says each bit in the diagnostic

11   message is mapped to at least one DMT symbol. So the language

12   is different, yes.

13   Q.   Okay. So on the left, 36, symbols are mapped to bits.

14   And on the right, claim 1, which is not asserted in this case,

15   bit is mapped to a symbol. Do I have that right, sir?

16   MS. RATYCZ: Objection, Your Honor. This is claim

17   differentiation.

18   THE COURT: What's your response, counsel?

19   MR. STEVENS: I'm -- next question, I'm going to put

20   up the standard and we're going to see which one it matches,

21   whether it matches the language of the asserted claim or

22   whether it doesn't.

23   THE COURT: I'll overrule the objection.

24   MR. STEVENS: If we could go to the next slide,

25   please.

```
 1    Q.   (BY MR. STEVENS)  And let's look at the language that you

 2    talked about with your counsel from the standard itself.  And

 3    what it says is that at the very --

 4           MR. STEVENS:  If we could highlight the mapping of

 5    the SOB -- the SOC bits, if we could highlight that sentence

 6    please.

 7    Q.   (BY MR. STEVENS)  So what the standard that you were

 8    talking about actually says is the mapping of bits to

 9    sub-carriers.  In other words, the standard requires you map

10    the bits to symbols.  Is that right?

11    A.   Standard says that one information bit per DMT symbol.

12    Q.   And that's different language than claim 36 uses.  True?

13    A.   I think we often rely on language that's different than

14    the exact language of the claim, but it is different.

15    Q.   Okay.

16           MR. STEVENS:  We can take that down.

17    Q.   (BY MR. STEVENS)  I'd like to turn to the other patent

18    that you talked about, the '354 Patent, which I believe you

19    called the ROC patent.  Is that right, sir?

20    A.   Yes.

21    Q.   Okay.  Great.  The ROC patent has 12 claims.  True?

22    A.   I don't recall offhand.  I'll take your statement as

23    true.

24    Q.   Okay.  And, again, you -- during your direct testimony,

25    you talked about one of those 12 claims.  Is that right?
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1    A.    Yes.

2    Q.    Okay.  And just to be clear, this ROC feature, R-O-C,

3    that's not something that Aware invented.  True?

4    A.    I don't know the history of that, so I couldn't answer

5    that.

6    Q.    Okay.  Now -- well, first off, you agree with me, sir,

7    that the mode that you pointed out, the ROC mode that you

8    pointed out during your direct testimony, that's optional.  Is

9    that right?

10   A.    Absolutely.

11   Q.    Okay.  So everything that you talked about when you

12   talked about the ROC mode, again that's an optional feature.

13   Somebody does not have to do that in order to comply with the

14   standard.  True?

15   A.    That's correct.

16   Q.    Okay.  And I heard in your testimony -- well, let me

17   withdraw that.

18         And you appreciate that, when that's true, when the

19   claims are optional, you can't just point to the standard; you

20   have to look at what the actual products do.  Is that fair,

21   sir?

22   A.    Yes, and that's what I did.

23   Q.    Okay.  So I just want to make sure I understand.  For the

24   ROC patent, looking at the standard alone, that's not enough

25   to satisfy your burden.  Is that fair?
```

1   A.   It helps me satisfy the burden, but it's not enough, yes.

2   Q.   Got it. Okay. So we need to look at the product itself.

3   Is that true?

4   A.   Yes.

5   Q.   Now, for this patent, like the other patent, you didn't

6   yourself test any CommScope products. Right?

7   A.   No, I did not perform the test.

8   Q.   You relied instead on Doctor Cooklev's testing. Is that

9   fair?

10   A.   I believe that's a fair statement.

11   Q.   Okay. So let's look at some of Doctor Cooklev's testing

12   and what it shows when one of CommScope's products actually

13   comes online.

14   MR. STEVENS: So if we could look at slide DDX 9.4,

15   please.

16   THE COURT: Mr. Stevens, you need to ask questions

17   and not make statements about let's look at this and see what

18   it shows. Ask the man a question.

19   MR. STEVENS: I will do that.

20   Q.   (BY MR. STEVENS) You recognize this as one of the tests

21   that Doctor Cooklev ran. Is that right?

22   A.   I believe this comes from his -- his test package, yes.

23   Q.   And am I correct that this is the R-MSG-2 the R.message

24   2. Is that right?

25   A.   That's what he has highlighted here.

1   Q.   And what this is is, at initialization, the CommScope

2   product is telling the other side what it's capable of. Is

3   that correct, sir?

4   A.   It does that in several messages.

5   Q.   Okay. Let's look at the next slide, and I want to

6   highlight two of these. One of the lines was the downstream

7   OLR capabilities. Do you see that, sir? We can go back one

8   if it makes it easier to read.

9   MR. STEVENS: Let's go back one slide, please.

10 Q.   (BY MR. STEVENS) Do you see it's highlighted right

11 there?

12 A.   Yes.

13 Q.   Downstream OLR capabilities. Do you see that, sir?

14 A.   Yes, I do.

15 Q.   And about seven lines lower, you are going to see

16 upstream OLR capabilities. Is that right?

17 A.   Yes.

18 Q.   Okay. So let's go to the next slide and see what it

19 actually says about ROC. So under downstream capabilities, it

20 says, ROC support, and then over on the right, it says, not

21 supported. Did I read that right, sir?

22 A.   Yes, that's what it says.

23 Q.   Okay. And this is Doctor Cooklev's testing of the

24 accused products in this case. Is that right?

25 A.   Well, it's the testing that he performed, yes.

1   Q.   Correct.   Now let's look at the upstream direction.

2   There's also a field here or a line that says, ROC or R-O-C

3   support. Do you see that in the upstream direction?

4   A.   Yes.

5   Q.   And also on the right, it says, not supported. Is that

6   correct, sir?

7   A.   That's what it says.

8   Q.   Okay.

9   MR. STEVENS: Your Honor, I pass the witness.

10   THE COURT: Is there redirect?

11   MS. RATYCZ: Yes, Your Honor.

12   THE COURT: All right. Proceed with redirect when

13   you're ready.

14   REDIRECT EXAMINATION

15   BY MS. RATYCZ:

16   Q.   Doctor Brody, in your opinion would a chipset such as the

17   Broadcom chipset be able to perform any of the functions of

18   the asserted claims without the other components in the

19   product?

20   A.   No, it wouldn't.

21   Q.   You were asked about claim 36.

22   MS. RATYCZ: Here we can put up slide -- perfect.

23   Q.   (BY MS. RATYCZ) And, in particular, you were asked about

24   claim element 36[b]. Do you recall that?

25   A.   Yes, I do.

1   Q.   Now, in your expert opinion, is there any difference

2   between a bit mapped to a DMT symbol or a DMT symbol mapped to

3   a bit?

4   A.   No. Often things that are relied upon to show

5   infringement don't use the exact same language as the claim,

6   and that's why I've applied this. And I don't believe there's

7   any difference.

8   Q.   And to be clear, which claim of the '686 Patent is

9   relevant for infringement in this case?

10 A.   Well, it's claim element 36[b] where we're talking about

11 the DMT symbols mapped to one bit of the diagnostic message.

12 Q.   I mean, as a general matter, from the '686 Patent we're

13 talking about claim 36. Right?

14 A.   Yes.

15 Q.   Okay. Now, you were --

16   MS. RATYCZ: You can take that slide down. Thank

17 you.

18 Q.   (BY MS. RATYCZ) You were asked about whether the

19 portions of the standard -- of the VDSL2 standard that you

20 relied on for your VDSL2 theory was optional. Do you recall

21 that question?

22 A.   Yes.

23 Q.   Do you have any evidence in this case to show that

24 CommScope's products actually implement that optional feature?

25 A.   Yes, I do.

1   Q.   And what is that?

2   A.   It was the review of the source code by Doctor Cooklev

3   and also the testing he performed.

4   Q.   And on the topic of the testing, was the testing

5   performed using G.INP?

6   A.   Yes, it was.

7   Q.   And does it matter whether the ROC is supported or not to

8   your infringement opinions?

9   A.   No. As I pointed out in section C.12.2 of the G.INP

10   standard, it implements the ROC either way, whether it's

11   enabled in the products or not.

12   Q.   Thank you, Doctor Brody.

13   MS. RATYCZ: Pass the witness.

14   THE COURT: Further cross-examination?

15   MR. STEVENS: I do, Your Honor.

16   RECROSS EXAMINATION

17   BY MR. STEVENS:

18   Q.   I notice when you went through the ROC patent, you had

19   two columns and you went through the check box exercise twice.

20   Is that right?

21   A.   That's correct.

22   Q.   And the reason you do that is TQ Delta's attempting to

23   charge CommScope twice for the same patent. Is that right?

24   A.   I don't know what the damages experts have done.

25   Q.   Do you know that TQ Delta's asking for $20 million for

1   this one patent?

2   A.   No, I didn't know that.

3   Q.   Okay. And then did I hear you say it doesn't matter for

4   your infringement analysis whether ROC is enabled or not?

5   That doesn't matter at all to you?

6   A.   It doesn't, no. It doesn't matter whether it's enabled

7   when G.INP is implemented.

8   Q.   Ah. It does matter for your first column for VDSL2.

9   Right?

10 A.   Yes.

11 Q.   Okay.

12   MR. STEVENS: So let's bring that back up. DDX 9.5,

13 please. I just don't want there to be any -- any confusion

14 here. DDX 9.5.

15   THE COURT: Counsel, whether you want there to be

16 confusion or not doesn't authorize you to make sidebar

17 comments in the presence of the jury. Now, that's the second

18 or third time I've stopped you about that. Ask the witnesses

19 questions.

20   MR. STEVENS: I apologize, Your Honor.

21 Q.   (BY MR. STEVENS) Again, each time where it says ROC

22 support not supported, what that means is that in CommScope's

23 product, it does not do ROC. Is that correct?

24 A.   That -- I believe that is correct.

25 Q.   Okay. And in G.INP, when CommScope's products don't do

1   ROC, it actually sets one of the things that you talked about,

2   the SNR margin offset, it sets that to zero. Is that correct,

3   sir?

4   A.   Yes.

5   Q.   Okay.

6   MR. STEVENS: Thank you, Your Honor. I have no

7   further questions.

8   THE COURT: You pass the witness. You pass the

9   witness?

10   MR. STEVENS: I pass the witness, Your Honor.

11   THE COURT: All right. Is there additional direct?

12   MS. RATYCZ: Yes, Your Honor, briefly.

13   THE COURT: All right. Proceed with additional

14   direct examination.

15   REDIRECT EXAMINATION

16   BY MS. RATYCZ:

17   Q.   Now, Doctor Brody --

18   MS. RATYCZ: Can we put that slide up you just had

19   up showing the test results there?

20   Q.   (BY MS. RATYCZ) Well, I can just ask you as well. Does

21   not supported mean that the CPE does not support it under any

22   circumstances?

23   A.   No. I believe in this case it's saying it's not

24   supported in this particular test that's being run.

25   Q.   Do you have any idea why in these particular tests the

1   ROC was not supported?

2   A.   Well, I understand that the other side, the DSLM, the DSL

3   access multiplexer, had very old firmware and couldn't access

4   the ROC enabling the ROC in the CPE.

5   Q.   So, again, your -- the testing results that you're

6   relying on are applicable to your second infringement theory.

7   Is that true?

8   A.   Yes. The testing results I'm relying on are just for my

9   second theory of VDSL2 plus G.INP.

10   Q.   And what do those testing results show?

11   A.   It shows that whether the ROC is enabled or not enabled,

12   the ROC is used.

13   Q.   And what does it mean if the ROC is used?

14   A.   It means that you have two different pluralities of

15   carriers, you have different bits on the plurality of

16   carriers, and different SNR margins are used on the different

17   pluralities of carriers.

18   Q.   Thank you.

19   MS. RATYCZ: I pass the witness.

20   THE COURT: Any further cross-examination?

21   MR. STEVENS: No, Your Honor.

22   THE COURT: You may step down, Doctor Brody.

23   Counsel, approach the bench, please.

24   (The following was had outside the hearing of the

25   jury.)

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 1                THE COURT:  Is it deposition time?

 2                MR. DAVIS:  I believe it -- I think it is, Your

 3      Honor.

 4                THE COURT:  How many depositions are we going to

 5      present?

 6                MR. DAVIS:  I believe there's 30 minutes, but if I

 7      could just confirm.  I frankly have forgotten whether we're

 8      doing Doctor Cooklev next or the depositions.  I just don't

 9      recall.

10                THE COURT:  My indication from the email sent

11      overnight was that we'd be in depositions now, but you can

12      confirm.

13                MR. DAVIS:  That is probably right.

14                THE COURT:  Okay.  Well, if you need to check with

15      your co-counsel, check and let me know.

16                MR. DAVIS:  Okay.  If it is, shall we proceed with

17      them?

18                THE COURT:  Yes.  And I assume somebody is going to

19      identify the deposition and the witness for the record before

20      we play the video depo?

21                MR. DAVIS:  Yes.

22                THE COURT:  Okay.

23                MR. DAVIS:  That's correct, Your Honor.

24                THE COURT:  All right.  Let's proceed.

25                (The following was had in the presence and hearing
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1   of the jury.)

2   THE COURT: Plaintiff, call your next witness.

3   MR. DAVIS: Your Honor, at this time we have some

4   depositions to play, and we will be ready to introduce those

5   witnesses right now.

6   THE COURT: All right.

7   MR. DAVIS: Would you like us to do that from the

8   podium?

9   THE COURT: Yes.

10   MR. DAVIS: Okay.

11   THE COURT: Identify your first witness to be

12   presented by deposition, please. And if you have the

13   designated time chargeable to each side, announce that so I'll

14   have that for my recordkeeping.

15   MR. DAVIS: Your Honor, TQ Delta's first witness by

16   deposition is Mr. Gong San Yu. Mr. Gone San Yu is a Broadcom

17   witness. He's a third party to the lawsuit. There are nine

18   minutes and 41 seconds for TQ Delta's deposition time, and 6

19   minutes and 54 seconds for CommScope.

20   THE COURT: All right. Proceed with this witness by

21   deposition.

22   GONG-SAN YU, Ph.D., BY SWORN DEPOSITION,

23   Q.   Good morning, Doctor Yu. This is Peter McAndrews. I

24   represent TQ Delta.

25   Could you please state your name for the record?

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 1    A.    Gong-San Yu, G-O-N-G hyphen S-A-N, and the last name Y-U.

 2    Q.    And is it okay if I call you Doctor Yu today?

 3    A.    Yes, no problem.

 4    Q.    And the technology used by the Broadcom chips to

 5    communicate data over phone lines is DSL technology.  Is that

 6    correct?

 7    A.    Correct.

 8    Q.    Okay.  And the DSL technology that the Broadcom DSL chips

 9    implement, that's technology that's defined by certain ITU-T

10    standards.  Is that right?

11    A.    Right.

12    Q.    And the -- the ITU-T standards that the Broadcom DSL

13    chips implement include the VDSL2 standard.  Is that right?

14    A.    Correct.

15    Q.    And the VDSL2 standard is also referred to sometimes as

16    G.993.2.  Is that right?

17    A.    Correct.

18    Q.    So is the BCM6368 -- I'm sorry.  Let me state that again.

19          Is the BCM6368 chip capable of G.INP operation?

20    A.    I'm not really sure.  I don't think so.

21    Q.    Okay.  How about the BCM63X68 set of chips?

22    A.    It should be.

23    Q.    How about for the BCM63148 chip?  Does that include G.INP

24    capability?

25    A.    Yes.  There's no doubt.
```

1   Q.   Okay. And is it your understanding that G.INP -- the

2   G.INP standard is also referred to as G.998.4?

3   A.   Yes.

4   Q.   Understood. Okay. And -- and so is it true that

5   Broadcom uses the requirements of the standard as a guideline

6   in developing its chips?

7   A.   The purpose is -- I mean, I will say the goal to standard

8   compliance to satisfy those -- those -- those requirements,

9   but in reality, it's -- it's not something our product can be

10   a hundred percent satisfy the requirement. Some of the

11   standard requirement may be -- may not be implemented by any

12   of the parties. I mean, in that -- in that sense, no one

13   care, even if it's the part of standard, but no one implements

14   (indiscernible).

15   So the standard is there to be -- to -- to help

16   every -- every different -- I mean, company working on this

17   area to be able to enter. If some features are not protocol

18   or not considered important and no one implement, and those

19   (indiscernible) standard will become useless and no one

20   implement. So the idea is one thing. Protocol is the other

21   thing.

22   Q.   Is it true that -- that the BCM63X68 chips meet the

23   mandatory requirements of the G.993.2 standard?

24   A.   Yes.

25   Q.   Is it true that the BCM63148 meets the mandatory

1   requirements of the G.993.2 standard?

2   A.   Yes.

3   Q.   Okay.

4   A.   I -- I have to emphasize thing, the mandatory requirement

5   is based on our understanding. I mean, suppose for our

6   understanding was wrong? I mean, it's not our intention.

7   Q.   Understood. But the intent was to make a compliant

8   implementation.

9   A.   Yes, intended for the mandatory part, yes.

10   Q.   On that page, do you see the section 12.3.6.2,

11   entitled 'Quadrant Scrambler'? Do you see that?

12   A.   Yes.

13   Q.   Is it -- you -- are you familiar with what the quadrant

14   scrambler is in VDSL2?

15   A.   Yes.

16   Q.   Does the 63X68 chips, do they meet the requirements of

17   the quadrant scrambler of the VDSL2 standard?

18   A.   Yes.

19   Q.   Okay. Does the 63148 chip meet the quadrant scrambler

20   requirements of the VDSL2 standard?

21   A.   Yes.

22   Q.   Does the 6368 chip meet the quadrant scrambler

23   requirements --

24   A.   Yes.

25   Q.   -- of the VDSL2 standard?

```
 1    A.    Yes.

 2    Q.    And is it your understanding that the -- the quadrant

 3    scrambler is used for certain initialization messages?

 4    A.    Yes.

 5    Q.    Okay.  And is it your understanding that the quadrant

 6    scrambler is used for initialization messages where -- where

 7    two bit values of the message are repeated on multiple

 8    carriers?

 9    A.    Yes.

10    Q.    The operation that we described whereby initialization

11    messages have -- have bits that are repeated on multiple

12    tones, that's a requirement of the VDSL2 standard.  Correct?

13    A.    Correct.

14    Q.    And is that operation implemented by the 63X68 chips?

15    A.    Yes.

16    Q.    Is that operation implemented by the 63148 chips?

17    A.    Yes.

18    Q.    And is that operation implemented by the 6368 chip?

19    A.    Yes.

20    Q.    And for the 63148 chip, is it true that all versions of

21    firmware will result in a chip that does the quadrant

22    scrambling operation and the repetition of bits for

23    initialization messages?

24    A.    Yes.

25    Q.    And is it true for the 6368 chip, that all versions of
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1    firmware will result in a chip that performs the quadrant

2    scrambling operation and the repetition of bits pursuant to

3    the VDSL2 standard?

4    A.   Yes.

5    Q.   Is there -- is the mapping described in table 12-68 used

6    in the BCM63X68 chips?

7    A.   Yes.

8    Q.   For all firmware versions?

9    A.   Yes.

10   Q.   Is the mapping described in 12-68 used in the BCM63148

11   chip?

12   A.   Yes.  This -- this part is very fundamental.  So it apply

13   to all the Broadcom chips -- all the chips --

14   Q.   Okay.

15   A.    -- for the previous table.

16   Q.   So it's -- it's used in all Broadcom chips and for all

17   firmware versions.  Is that right?

18   A.   Correct.

19   Q.   Do you see section 12.4, loop diagnostic procedures?

20   A.   Yes.

21   Q.   So let me ask this:  For the -- for each of the 6368,

22   63X68, and 63148 chips, is it -- is it true that they are all

23   capable of loop diagnostic mode at least in the sense that

24   they can transmit quiet line noise during diagnostic mode for

25   all versions of firmware?
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1    A.    Yes.

2    Q.    Do you understand that a sub-feature of seamless rate

3    adaptation is dynamic change of interleaver depth?

4    A.    Yes.

5    Q.    Is that sometimes referred to as dynamic D?

6    A.    Yes.

7    Q.    Does the 63X68 chip implement the dynamic D feature of

8    SRA?

9    A.    Yes.  Yes.

10   Q.    Does the 63148 implement the dynamic D feature of SRA?

11   A.    Yes.

12   Q.    Does the 6368 implement the dynamic D feature of SRA?

13   A.    Yes.

14   Q.    Is it true that they -- that each of those three chips

15   and all firmware versions of those three chips are capable of

16   changing their interleaver depth during showtime?

17   A.    Yes.

18   Q.    Okay.

19   A.    And I can tell you that realities, when we implemented

20   dynamic D with the SRA, if my -- if my memory is correct,

21   Broadcom probably the only company in the industry who can do

22   that.  What I mean, we actually -- we have no idea if our

23   product is a standard compliant or not, even if we intend to,

24   because no one else can interoperate with us because they

25   cannot do it.
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1    Q.   So I see that in that same line, and this is something

2    that I maybe missed in the last release, I see that it says

3    ROC in the same line as SRA.  Do you see that?

4    A.   Yeah.

5    Q.   Okay.  Do you know whether that means that this supports

6    VDSL2 with robust overhead channel?

7    A.   Yeah.

8    Q.   Okay.

9    A.   How it says robust overhead channel.

10   Q.   Okay.  So are you familiar with the -- the term single

11   latency VDSL2 with ROC?  Does that make sense to you?

12   A.   Oh, yeah.

13   Q.   Okay.  And so -- so that would mean that you have a

14   single latency path that is VDSL2 data, and you would have

15   separately a robust overhead channel.  Do you understand that?

16   A.   Yeah.

17   Q.   Do -- do the Broadcom chips support that mode of

18   operation?

19   A.   I mean, if we mention it there, it will support, but I

20   don't know if for every chip it's supported.

21   Q.   Okay.  What about the 63X68 and 63148?

22   A.   It -- already mention it support ROC.  However,

23   it's -- it's a feature showing ROC is supported.  It can do

24   that.

25   Q.   So if it says ROC, you would expect that it can do single
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1   latency VDSL with an ROC.

2   A.   Right.

3   Q.   So I want to set this document aside. Can we -- can you

4   open the document that is DSL 3 notes XMT path?

5   A.   Okay.

6   Q.   So, Doctor Yu, you offered this document. Is that

7   correct?

8   A.   Correct.

9   Q.   Okay. I want to ask you something very specific about

10   what this document would tell us, and that is that the bit

11   encoder hardware of the chip--and this is the 63X68 set of

12   chips--the bit encoder is responsible for quadrant scrambling.

13   Correct?

14   A.   Yes.

15   Q.   And -- and the bit encoder hardware is also responsible

16   for the replication of bits in the 10 tone pattern. Correct?

17   A.   Let me try to recall. Yes, correct.

18   Q.   Okay. And that's -- and so -- so it -- so what

19   I'm -- what I'm asking you just generally, is it -- is it your

20   recollection that the bit encoder is responsible for quadrant

21   scrambling in the 63X68 chips?

22   A.   That's correct.

23   Q.   Is the -- is the bit encoder block also responsible for

24   quadrant scrambling --

25   A.   Yes.

1   Q.   -- in the 63148 chips?

2   A.   Yes.

3   Q.   And even if Broadcom enables that feature when it ships

4   the chip to its customer, Broadcom's customer has the choice

5   in its own product whether to enable or disable that feature.

6   Is that fair?

7   A.   Correct. Correct.

8   Q.   And even sometimes an end customer, for example, a

9   telephone operator, they may not -- they may choose not to use

10 features that are otherwise supported. Is that fair?

11 A.   That's correct. I mean, in reality, it's very difficult

12 because a customer can -- can choose what they want through

13 the CO QUI. They can control it.

14 Q.   And are you familiar with the max_delay_octet parameter?

15 A.   Yes, I think -- if my memory is correct, there's a

16 formula in that standard to how this thing is defined.

17 Q.   And so what does the max_delay_octet field describe?

18 A.   That's -- that's a precise -- precise meaning formula to

19 describe the max delay. I think the max delay is an equation

20 to show that -- let me try to -- to search it, a max delay, so

21 I can tell you what the definition it is. I just don't know

22 why I can't search this. Okay. I see. Okay.

23   If you go to the page -- the -- the -- the page 170 in

24 the (indiscernible) reader which is internal pages 162, you

25 will see the equation with the whatever max_delay_octet

1   downstream data and the max_delay_octet downstream one.

2   Together, it had to be the max_delay_octet DS, which

3   is -- which is defined in -- in separate place in the

4   max_delay_octet, which is the formula of the -- the so-called

5   combined memory. We talk about it many times for -- for that.

6   So basically this is the -- something that is defined in

7   the standard.

8   Q.   Okay. And just so we're clear, that's Exhibit 6,

9   internal page 162. Correct?

10   A.   Yeah.

11   Q.   Yeah. Okay.

12   A.   And hold on. For some reason, it just come -- just a

13   second (indiscernible). Anyway, if my memory is correct, I

14   haven't -- okay. I find it. I think in the pages 33 in the

15   Equiberry (phonetic) page, it is page 33, which is the

16   internal page 25, you can see the formula. So

17   max_octet_delay was a -- I mean, it's a dedicated equation, I

18   think.

19   Q.   Okay. And then that's --

20   A.   That is the so-called total -- total memory, I mean,

21   internal standard. In our tool, total memory, definitely the

22   bigger than this one. This is -- this is more like a

23   theoretical -- theoretical minimum memory, which doesn't count

24   any of the implementation overhead, and we definitely have an

25   implementation overhead. We must to be bigger than this one.

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 1              THE COURT:  Does that complete this witness by

 2   deposition?

 3              MR. DAVIS:  It does, Your Honor.

 4              THE COURT:  Call your next witness by deposition,

 5   please.

 6              MR. DAVIS:  Your Honor, Plaintiff's next witness is

 7   Mr. Paul Baker, who is an employee of CommScope.  The time for

 8   this witness is 5 minutes and 45 minutes [sic] for the

 9   Plaintiff and 1 minute and 43 minutes [sic] for Defendant.

10              THE COURT:  35 minutes and 43 seconds?

11              MR. DAVIS:  Yes, Your Honor.  I misspoke.  I

12   apologize.

13              THE COURT:  And 1 minute and how many seconds for

14   the --

15              MR. DAVIS:  43.

16              THE COURT:  43.  All right.  Proceed with this

17   witness by deposition.

18              PAUL BAKER, BY SWORN DEPOSITION,

19   Q.   Would you please state your name for the record?

20   A.   Paul Baker.

21   Q.   And you work at CommScope.  Is that right?

22   A.   Yes.

23   Q.   And what -- what's your job at CommScope?

24   A.   I'm the senior director of product management.

25   Q.   And generally what is your -- what are your job duties?
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1   A.   I am the lead for broadband, DSL, fixed wireless access,

2   and fiber CPE products.

3   Q.   Is AT&T the largest customer for CommScope's DSL

4   products?

5   A.   Yes.

6   Q.   Who are the other customers you're aware of besides AT&T

7   for DSL products?

8   A.   Frontier.

9   Q.   Do you have a sense for how long a customer like AT&T or

10   Frontier was able to use a CPE product before it gets

11   replaced? Do you have a sense of the typical life span? Is

12   it two years, five years, ten years? Do you have any sense of

13   that?

14   A.   We try to design our products for a five-to-seven year

15   life span.

16   Q.   Was AT&T involved, to your knowledge, in designing the

17   BGW210?

18   A.   Yes.

19   Q.   Are there any other DSL products that AT&T is going to

20   purchase once the BGW210 is end of life?

21   A.   Not that I'm aware of.

22   Q.   Okay. So they're not -- make sure I have it right. So

23   once the BGW210 is end of life, then all of the DSL products

24   that AT&T has purchased have -- will have reached end of life

25   status. Is that right?

 1   A.   That they have purchased from CommScope, that's correct.

 2   Q.   Correct. Is the BGW2310 capable of bonded VDSL2?

 3   A.   Yes.

 4   Q.   And in helping with the design of the BGW210 did -- was

 5   it AT&T who indicated that it wanted vectoring supported

 6   product?

 7   A.   Yes.

 8   Q.   Did AT&T also indicate that it wanted bonded VDSL2

 9   supported in the product?

10   A.   Yes.

11   Q.   Do you know if AT&T uses bonded in its network for DSL?

12   A.   They do.

13   Q.   Does CommScope provide any ongoing support for its DSL

14   products to customers such as software updates or technicians

15   on premise or any -- anything like that?

16   A.   Yes. We provide software maintenance. But we

17   don't -- we don't provide technician on-site support.

18   Q.   Does CommScope provide any hardware maintenance like

19   refurbishments or anything like that?

20   A.   Only in the context of warranty repair.

21   Q.   Can you describe for me what the software maintenance

22   service is you referred to?

23   A.   Very much customer-by-customer dependent. It can

24   range from providing firmware updates for critical software

25   vulnerabilities all the way through to new feature

1   development, bug fixes, ongoing embellishment of the software

2   capabilities, whether they're requested by the customer or

3   added as part of a generally-available firmware update by

4   ourselves.

5   Q.   And you mentioned the hardware maintenance on warranty

6   repairs. Can you explain that for me a little bit?

7   A.   When we do a contract with our customer, we will add a

8   provision for hardware and software warranty periods. If the

9   hardware fails within a certain period after it was delivered,

10   the customer can test that in their warehouse. And if they

11   confirm the failure, then send it back to us under RMA, return

12   materials authorization. And we will similarly test the

13   product, and if we confirm the failure, we will either repair

14   or replace the product.

15   Q.   How long is the warranty period, typically, if you know?

16   A.   It varies customer by customer. It could be one year.

17   It could be up to three years.

18   Q.   Do you know what it is for AT&T?

19   A.   Three.

20   Q.   I've seen in some documents they talk about refurbishing

21   devices. Do you know what that's referring to?

22   A.   In our parlance, a refurbished product is whether a unit

23   comes back from the field, maybe a broadband customer leaves

24   service and moves to a different service provider. So the

25   gateway that they had in their home gets returned to the

1	service provider, and that can go through a screen-and-clean
2	process. And if found to still be functional, then it can be
3	sent to another new customer.
4	Q. Is that a service that CommScope provides?
5	A. Typically not.
6	Q. Okay. That's something that the customer themselves
7	would do, I guess?
8	A. Themselves or with a third party.
9	Q. Okay. Do you know what that arrangement looks like for
10	AT&T?
11	A. They use third parties.
12	Q. And I assume CommScope's not involved in that. Is that
13	right?
14	A. Correct.
15	Q. Why, if you know, did CommScope decide to release the
16	VDSL2 product?
17	A. VDSL2 offers the ability to get faster speeds over ADSL.
18	Q. Why, if you know, did CommScope decide to sell the
19	product that supported VDSL2 vector?
20	A. It would have been something that AT&T was requesting.
21	Q. Why, if you know, would CommScope decide to sell a
22	product that supported G.INP?
23	A. It's not really something that CommScope decides upon.
24	It comes with the silicon that we buy. And so we're just
25	making it known that the silicon that's in the product has

1   this capability.

2   Q.   Is there a reason you're aware of why CommScope would buy

3   a silicon that supports G.INP?

4   A.   Because there wasn't an alternative.

5   Q.   Have you seen any of the patents that are involved in

6   this case?

7   A.   No, I haven't.

8   THE COURT: Does that complete this witness by

9   deposition?

10   MR. DAVIS: It does, Your Honor.

11   THE COURT: Do you have another deposition witness?

12   MR. DAVIS: We do, Your Honor.

13   THE COURT: Please proceed with this witness.

14   MR. DAVIS: Plaintiff's next witness is Mr. Jaime

15   Salazar, also from CommScope. And the Plaintiff's time is 2

16   minutes and 38 seconds, and the Defendants' time is 55

17   seconds, Your Honor.

18   THE COURT: Please proceed with this witness by

19   deposition.

20   JAIME SALAZAR, BY SWORN DEPOSITION,

21   Q.   Can you state your name for the record, please?

22   A.   Yes. My name is Jaime Salazar.

23   Q.   And you work at CommScope. Right?

24   A.   That is correct.

25   Q.   What's your job title at CommScope?

1   A.   I'm a software engineering manager right now.

2   Q.   Do you have any interaction with any of CommScope's

3   customers, like AT&T?

4   A.   I do. I do have interaction with some of the AT&T

5   personnel.

6   Q.   Do you know for AT&T about how often there's a new

7   software release pushed out for their DSL CPEs?

8   A.   For the 51 and 5268s, we no longer have active releases.

9   Q.   I see.

10   A.   So there's no active releases going on.

11   Q.   When did the -- when did there cease to be active

12   releases for those two products, the 5168 and 5268?

13   A.   The 5168 has been many years, probably six, five. The

14   5268, the last release was towards the latter part of the last

15   year.

16   Q.   Before the 5268 ceased having active release, do you know

17   about how often there was a new release for that product?

18   A.   Yes. There would be approximately every three or four

19   months, going back probably the last couple of years, prior to

20   the last release.

21   Q.   So can you walk me through the process of CommScope has

22   released a new release for the 5268 and how it would get to a

23   customer like AT&T and then how the release would go from AT&T

24   to the -- to the field units, if -- if you know?

25   A.   The process at a high level is as follows: When we have

1   tested software, the sales organization is informed that

2   software is ready for entitlement to the target customer.

3   They will take the software from one of our servers and upload

4   it to a separate server that a customer has access to for

5   software distribution purposes.

6   And then subsequent to that, once the customer does the

7   necessary testing, they will work with their, you know,

8   infrastructure people to deploy this -- this software similar

9   to the TR-69 that we see here on this one document. So

10   they -- but that process is -- I am removed from what happens

11   once I give it to, you know, the customer-facing organization

12   within CommScope.

13   Q.   You haven't looked at any of the patents in this case,

14   have you?

15   A.   I have not, no.

16   THE COURT: Does that complete this deposition

17   witness?

18   MR. DAVIS: It does, Your Honor.

19   THE COURT: Do you have another deposition witness?

20   MR. DAVIS: Yes, Your Honor. We have two more.

21   THE COURT: Please call your next deposition

22   witness.

23   MR. DAVIS: I'm going to try to get this right, but

24   the next witness is a Mr. Rajogopalan Ramanujam, and the time

25   is 2 minutes for TQ Delta and 36 seconds for CommScope.

1   THE COURT: Proceed with this witness by deposition.

2   RAJOGOPALAN RAMANUJAM, BY SWORN DEPOSITION,

3   Q.   Would you please state your full name for the record,

4   sir?

5   A.   Rajagopalan Ramanujam.

6   Q.   And where do you work, sir?

7   A.   I work for CommScope.

8   Q.   And what do you do for CommScope?

9   A.   I'm -- I'm a director responsible for CB division doing

10   software development.

11   Q.   And have you -- do you currently oversee any DSL product

12   development?

13   A.   There is no DSL product development.

14   Q.   In the past, have you overseen any DSL product

15   development?

16   A.   Yes.

17   Q.   Sir, do you know if CommScope worked with AT&T on

18   developing that firmware?

19   A.   They did. They did develop, but not with AT&T. We -- we

20   developed based on AT&T's requirements.

21   Q.   And so AT&T would send CommScope a list of requirements

22   for the firmware. Is that right?

23   A.   That is correct.

24   Q.   So for the firmware that CommScope was building for AT&T,

25   did CommScope take the requirements and then develop that to

1   AT&T's specification?

2   A.   That's correct.

3   Q.   And for the DSL CPE products, did I understand you

4   earlier when you said there's no ongoing DSL CPE development?

5   Is that correct?

6   A.   That is correct.

7   Q.   And so by that, you mean there are no featured DSL CPE

8   products that CommScope's developing?

9   A.   That's correct. There is no demand.

10 Q.   How many years did you say you had worked at CommScope?

11 A.   Twenty years.

12 Q.   And in your 20 years at CommScope, have you ever been

13 asked to check and see whether CommScope infringes a third

14 party's patent?

15 A.   No.

16 Q.   In your 20 years at CommScope, are you aware of any other

17 engineers at CommScope ever being asked to check whether a

18 CommScope project would infringe a third party's patent?

19 A.   No.

20 Q.   Sir, do you know whether CommScope licenses any patents

21 related to DSL technologies?

22 A.   No.

23   THE COURT: Call your next deposition witness.

24   MR. DAVIS: Yes, Your Honor. The next witness is

25 Steve Chochran. The time is 4 minutes and 52 minutes [sic]

1   for Plaintiff and 47 seconds for CommScope.

2   THE COURT: Please proceed.

3   STEVE CHOCHRAN, BY SWORN DEPOSITION,

4   Q.   Would you state your name for the record?

5   A.   My name is Steve Chochran.

6   Q.   And where do you work, Mr. Chochran?

7   A.   I work for CommScope in Austin, Texas.

8   Q.   And, Mr. Chochran, did your team work closely with AT&T?

9   A.   On these projects, yes, we did.

10   Q.   And what work would you do with a customer like AT&T?

11   A.   Largely discussing these kind of things: Was this a

12   defect or isn't it? When is this going to be fixed?

13   What -- is there a workaround? Those kind of issues.

14   Q.   And so they would, I guess, request changes to the

15   firmware, raise issues with it, and your team would implement

16   those changes. Is that fair?

17   A.   Yes.

18   Q.   And I guess, Mr. Chochran, how regularly was CommScope

19   producing new firmware versions for products for a customer

20   like AT&T?

21   A.   Typically for AT&T, once they had deployed, you would

22   have new firmware maybe twice a year. When you were in the

23   process of trying to deploy, you would turn around these MRs,

24   as we called them, fairly quickly. So monthly.

25   Q.   And what's an MR, Mr. Chochran?

1   A.   I guess it stands for maintenance release. It's -- it's

2   just a -- a tweak to an existing release essentially or to

3   a -- the previous firmware.

4   Q.   And is this firmware that you were releasing twice a

5   year, did that only go out on new devices for a customer like

6   AT&T?

7   A.   No. I mean, they would upgrade their existing devices on

8   a regular basis to -- to take advantage of new features.

9   Q.   And how would AT&T upgrade its existing devices, Mr.

10 Chochran?

11 A.   They used their ACS, their management system.

12 Q.   And so you provide this upgraded firmware to AT&T, and

13 through their ACS system, it then upgrades all of the existing

14 CPE devices that AT&T has. Is that correct?

15 A.   That's correct.

16 Q.   Do you know if AT&T currently uses the ACS software that

17 you're working on?

18 A.   Yes, they do.

19 Q.   Do you know who CommScope's other customers for that ACS

20 software are?

21 A.   We have several. The other big ones are Frontier and

22 Telmex, and then there are several smaller customers --

23 Q.   Mr. Chochran, what is the name of that ACS product

24 that we've been talking about that CommScope has?

25 A.   It's called ECO Manage.

1   Q.   Mr. Chochran, how many years have you worked in

2   engineering at CommScope?

3   A.   All companies combined, it's been 12 years.

4   Q.   But my question is: In your 12 years at CommScope, have

5   you ever been asked to review the patent of a third-party

6   company?

7   A.   No, I have not.

8   Q.   And in your 12 years at CommScope, were you ever aware of

9   anybody else in the engineering group at CommScope ever being

10 asked to review the patent of a third party?

11 A.   No, I do not.

12 Q.   Mr. Chochran, in your 12 years in engineering at

13 CommScope, are you aware of any process at CommScope to

14 determine whether the engineering projects that CommScope

15 undertakes do not infringe third-party patents?

16 A.   I'm not aware of any.

17 Q.   Mr. Chochran, do you have any familiarity with DSL

18 standards?

19 A.   I do not.

20 Q.   Do you remember just before the break, Mr. Fink asked you

21 a question about licensing at CommScope?

22 A.   Yes.

23 Q.   What is your general level of familiarity with licensing

24 at CommScope?

25 A.   Patent licensing, I don't really know anything about.

1   We're very careful with, like, software -- open source

2   software licenses and that kind of stuff.

3   Q.   What is your general level of familiarity with

4   patent-related issues at CommScope?

5   A.   I mean, almost none.

6   THE COURT: All right. Next witness.

7   MR. DAVIS: Your Honor, we have one more witness by

8   deposition.

9   THE COURT: All right.

10   MR. DAVIS: Courtney Rosenthal. The time is 2

11   minutes and 51 seconds for Plaintiff and zero time for

12   CommScope, and this is our final deposition.

13   THE COURT: All right. Proceed with this witness by

14   deposition.

15   MR. DAVIS: Yes, Your Honor.

16   COURTNEY ROSENTHAL, BY SWORN DEPOSITION,

17   Q.   Will you please state your full name for the record?

18   A.   My name is Courtney Louise Rosenthal.

19   Q.   And, Ms. Rosenthal, where do you live?

20   A.   I live in Austin, Texas.

21   Q.   Ms. Rosenthal, where do you work?

22   A.   I work for CommScope.

23   Q.   Ms. Rosenthal, you work as a principal software engineer

24   at CommScope. Is that correct?

25   A.   Yes, I do.

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 1    Q.    What software do you work on for CommScope?

 2    A.    I work for the group that produces the ECO Service

 3    Management platform.

 4    Q.    And so does ECO Manage use CWMP to essentially configure

 5    the device for use?

 6    A.    That would be one of its functions.  The term of art we

 7    use for that is provisioning.

 8    Q.    Okay.  And so then does ECO Manage configure that CPE

 9    device or element so it could be used by the subscriber -- I

10    think what you called provisioning earlier?

11    A.    Yes.  Provisioning is a feature of ECO Manage for

12    services.

13    Q.    And what does provisioning establish for a CPA device?

14    A.    It provides scripted execution of commands by the CPE to

15    set it up for the appropriate services for the customer.

16    Q.    Ms. Rosenthal, do you see in this first part of your

17    resume where you say, I work on products that manage and

18    provide intelligence for residential broadband devices, open

19    parentheses, CPE, close parentheses, and associated managed

20    device.  Our products manage networks that scale to millions

21    of devices?

22    A.    I do see that.

23    Q.    So where did you get that 'scale to millions of

24    devices' part of what you said, Ms. Rosenthal?

25    A.    It is my understanding that we have one or more large
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1   customers that have device populations on that scale

2   connecting to an ECO Manage system.

3   Q.   And do you know who those customers are?

4   A.   One that comes to mind is AT&T.

5   THE COURT: Does that complete this witness by

6   deposition?

7   MR. DAVIS: Yes, it does, Your Honor.

8   THE COURT: Does this complete the series of

9   depositions you intended to offer?

10   MR. DAVIS: Yes.

11   THE COURT: All right. Your next witness will be a

12   live witness?

13   MR. DAVIS: It will, Your Honor.

14   THE COURT: Okay. Then, ladies and gentlemen, we're

15   going to take a short recess at this point before we move on

16   with the next live witness. If you will, simply close your

17   notebooks and leave them in your chairs, follow all my

18   instructions, including not to discuss the case among each

19   other, and we'll be back shortly to continue.

20   The jury's excused for recess.

21   (Whereupon, the jury left the courtroom.)

22   THE COURT: Again, counsel, I'll try to keep this

23   short to 10 or 12 minutes. With that, the Court stands in

24   recess.

25   (Brief recess.)

1   THE COURT: Be seated, please.

2   Plaintiff, are you prepared to call your next witness?

3   MR. DAVIS: We are, Your Honor.

4   THE COURT: Let's bring in the jury, please,

5   Mr. Turner.

6   (Whereupon, the jury entered the courtroom.)

7   THE COURT: Please be seated, ladies and gentlemen.

8   Plaintiff, call your next witness.

9   MR. DAVIS: Your Honor, Plaintiff's next witness is

10   Dr. Todor Cooklev.

11   THE COURT: All right. Doctor Cooklev, if you will

12   come forward and be sworn by the Courtroom Deputy, please.

13   (Whereupon, the jury entered the courtroom.)

14   THE COURT: Please come around, sir. Have a seat at

15   the witness stand.

16   Mr. Hurt, you may proceed with direct examination when

17   you're ready.

18   MR. HURT: Thank you, Your Honor.

19   TODOR COOKLEV, PH.D., SWORN,

20   having been duly sworn, testified under oath as follows:

21   DIRECT EXAMINATION

22   BY MR. HURT:

23   Q.   Good afternoon, Doctor Cooklev.

24   A.   Good afternoon.

25   Q.   And did I pronounce your name right? Is it Cooklev?

1   A.   Yes, you did.

2   Q.   And can you please introduce yourself to the Court and to

3   the jury?

4   A.   My name is Todor Cooklev.

5   Q.   And Doctor Cooklev, why are you here to testify this

6   afternoon?

7   A.   I'm here to testify about the infringement by CommScope

8   of TQ Delta's patents.

9   Q.   And who retained you in this case?

10   A.   I was retained by TQ Delta and its attorneys.

11   Q.   And are you being paid for your work on this case?

12   A.   Yes, I am.

13   Q.   Does any part of your compensation depend on your

14   testimony or the outcome of this trial?

15   A.   No, it doesn't.

16   Q.   And Doctor Cooklev, did you prepare a set of slides to

17   assist with your testimony today?

18   A.   Yes, I did.

19   MR. HURT: And Your Honor, may I approach the

20   witness with the clicker?

21   THE COURT: You may. Hand it to the Court Security

22   Officer, please.

23   MR. HURT: And Mr. Diaz, if you can bring the slides

24   up.

25   Q.   (BY MR. HURT) Is this the presentation you put together,

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 1   sir?

 2   A.   Yes.

 3   Q.   And what were you asked to analyze in connection with

 4   this case?

 5   A.   I was asked to analyze the infringement of the memory

 6   sharing or memory saving patent, the patent on transmission or

 7   also impulse noise protection, and the infringement of the

 8   bonding family of patents.

 9   Q.   And before we get into the details of your opinions, can

10   you give us a little bit about your background?  What is your

11   current job today?

12   A.   I am professor of electrical and computer engineering.

13   Q.   And what do you do at that job?

14   A.   I teach courses generally related to communication

15   systems.  I also do research and do also service work.

16   Q.   And how long have you been a professor for?

17   A.   Twenty years.

18   Q.   And do you have a Ph.D., sir?

19   A.   Yes, I do; in electrical engineering.

20   Q.   And can you describe for the jury in general some of your

21   research experience?

22   A.   I have now more than 25 years of experience doing

23   research related to communication systems, and during this

24   time I have contributed to -- as an author or co-author to

25   more than a hundred publications.  Separately from this, I am
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1   named as an inventor or co-inventor on 32 -- to be precise, 32

2   issued patents.

3   Q.   And do you have any experience with DSL?

4   A.   Yes, I have. I was -- I worked at the International

5   Telecommunications Union, the same -- the standards group that

6   was working on developing DSL standards. I have contributed

7   to some submissions to the standard group, and at one of the

8   meetings of the standards group I served as a session chair.

9   Q.   And which DSL standards have you been involved with,

10   Professor Cooklev?

11   A.   I was involved at the time at work that subsequently led

12   to the development of VDSL2 that is at issue here.

13   Q.   And in addition to your DSL experience, can you describe

14   your other standards experience to the jury?

15   A.   Yes, I can. I have been involved for a number of years

16   with the IEEE standards association, and I just completed a

17   two-year term as a member at large of the board of governors

18   of the IEEE standards association. It is another standards

19   association just like the ITU.

20   Also the IEEE publishes magazines and journals, and there

21   is one magazine specifically devoted to communication

22   standards. It's called the IEEE Communications Standards

23   Magazine, and I am on the editorial board.

24   Previously I was a voting members of the IEEE 802.11.

25   That is the WiFi standards committee, and some other related

1   working groups.

2   Q.   And can you give the jury a brief overview of your

3   industry experience?

4   A.   So these are the companies that I have been involved --

5   and organizations that I have been involved with. Prior to

6   becoming a professor, I worked at what was then a large

7   company called 3Com. Subsequently I worked at Aware. That's

8   the same company that was mentioned here. I was for a long

9   time a consultant to Hitachi America. It's a company based in

10   San Jose, California. I was separated from that. I had a

11   relationship -- consulting relationship with Sun Microsystems.

12   More recently I've received a series of small business

13   technology transfer grants and other research grants from

14   organizations such as the Defense Advanced Research Projects

15   Agency, the Office of Naval Research, and the Air Force

16   Research Laboratory.

17   Q.   And when did you work for Aware, Doctor Cooklev?

18   A.   I worked for Aware between 19999 and 2002.

19   Q.   And since leaving Aware, over 20 years ago, Doctor

20   Cooklev, have you done any work or consulting for Aware?

21   A.   No, I haven't.

22   Q.   Have you kept up with any of your Aware former

23   colleagues?

24   A.   Yes, occasionally I have. I am -- clearly most of us

25   have gone on to other careers, but occasionally I have kept in

1   touch with my former colleagues at Aware.

2   Q.   In general, what type of work have you done with the

3   U.S. Military for the Navy, the Air Force, and for DARPA?

4   A.   Well, I developed one technology that's generally

5   relevant to what is called the electronic warfare, and that

6   led to the creation of a small company that received the a

7   series of research grants. Separately from that, I was also a

8   Navy fellow, again doing work relevant to this technology that

9   I developed.

10 Q.   And are you familiar with the type of source code that

11 has been produced in this case, sir?

12 A.   Yes, I am.

13 Q.   And can you just give a very brief overview of your

14 experience with source code to the jury?

15 A.   Well, during, as I said, more than 25 years that I've

16 been doing research, I am familiar with source code. During

17 the time that I worked at Aware, I worked on the

18 implementation of what was then advanced coding for DSL. So

19 I've written code implementing advanced coding for digital

20 subscriber line systems. I've also worked on the

21 implementation of other parts of communication systems.

22 And since that time, occasionally I've had to write code

23 implementing various algorithms.

24   MR. HURT: Your Honor, at this time I would offer

25 Doctor Cooklev as an expert in the fields of communication

1   systems, including DSL systems and the subject matter of the

2   asserted patents in this case.

3   THE COURT: Is there objection?

4   MR. BARTON: No objection, Your Honor.

5   THE COURT: Without objection, the Court will

6   recognize this witness as an expert in those designated

7   fields.

8   Please continues, counsel.

9   Q.   (BY MR. HURT) Can you describe for us, Doctor Cooklev,

10   the types of materials, such as documents and deposition

11   testimony, that you considered as part of your analysis in the

12   case?

13   A.   Yes, I can. Well, I've reviewed a lot of materials,

14   beginning with clearly the patents themselves. Certain claim

15   terms from the patents were construed by the Court.

16   'Construed' means they were defined, their meaning was defined

17   by the Court. And I applied the Court's definition for these

18   terms in my analysis.

19   I also reviewed the standards that are at issue in this

20   investigation. I reviewed materials produced by CommScope;

21   both materials that CommScope provides to its data sheets,

22   that CommScope provides to its customers, and confidential

23   materials that -- to which I had access during this

24   investigation.

25   And I also reviewed documents produced by Broadcom.

1   That's the chip company that's a third party to this case,

2   as well as Broadcom source code to which I was given access.

3   Q.   About how much source code did you end up reviewing,

4   Doctor Cooklev?

5   A.   Well, it's certainly a lot; in the thousands of pages.

6   Q.   And can you explain for the jury at a very high level the

7   process in which you reviewed the source code in this case?

8   A.   I had a professional source code review consultant, like

9   a research assistant, so at my direction I had this source

10   code consultant examine the code in detail, and obtained --

11   selected the code that is relevant to the asserted patents,

12   obtained printouts of this code. I mean, that was the

13   starting points of the analysis.

14   I also personally went to the facility where source code

15   was produced just to make sure that the selected code is what

16   is the code that I should be looking at and analyzing. And

17   separately from this, obviously I analyzed the printouts of

18   the source code.

19   Q.   And can you describe for the jury some of the witness

20   testimony you relied on as part of your analysis?

21   A.   Yes. I'm -- in my analysis I'm also relying on

22   deposition testimony from CommScope technical staff, the

23   deposition testimony from Broadcom witnesses, and the

24   deposition testimony and the expert reports produced by

25   CommScope's experts.

1   Q.   And can you describe for the jury the testing that you

2   did on the CommScope products, some of which we heard about a

3   little earlier today?

4   A.   Yes.   I personally tested the accused products -- the

5   operation of the accused products in the following way. So on

6   this slide we see -- on the right we see a CommScope product.

7   We see that's a modem. On the left-most part of the picture

8   we see the central office equipment or that's equipment at the

9   phone company. Between the modem and the central office

10   equipment is the piece of instrumentation equipment. That's

11   all the testing equipment called VDSL Xpert. So this is how

12   engineers test the operation of DSL equipment. The test

13   equipment VDSL Xpert doesn't modify the signals or doesn't

14   modify in any way what is exchanged between the modem and the

15   central office; it just captures. It captures everything that

16   is exchanged. And in this way I have access to what is

17   exchanged between the two devices.

18   Q.   And where is this test lab located physically?

19   A.   This test setup was at the test laboratory located in

20   England.

21   Q.   And if it was located in England, how were you able to

22   conduct the tests?

23   A.   Well, first I visited the test lab just to make sure that

24   all the testing are going to be done correctly. I had a

25   discussion and even with the test engineers, and I verified

1   even the calibration of the equipment that they have at the

2   lab there. But subsequently, after my visit, well, the test

3   equipment here, VDSL Xpert at the lab is connected to a

4   computer, and I had remote access to that computer, so I was

5   able from the United States just to log in onto that computer,

6   and once I had access to the computer I could get -- just like

7   I'm having access to the test equipment, and I was able to

8   essentially conduct the tests.

9   Q.   What analysis are you going to be presenting first for us

10   in this case?

11   A.   First I will be discussing the infringement by CommScope

12   of TQ Delta's patents.

13   Q.   And what claims and patents are you going to be

14   presenting on for infringement?

15   A.   So this is a summary of the patents and claims that I

16   will be presenting. That's claim 5 of the '048 Patent, claim

17   118 of the '411 Patent, and claim 17 of the '881 Patent.

18   Q.   And, in your opinion, Professor Cooklev, does CommScope

19   infringe each of these claims?

20   A.   Yes, it does.

21   Q.   And were you here during Doctor Brody's testimony about

22   representative products?

23   A.   Yes, I was here.

24   Q.   And do you agree with his conclusion that all the

25   CommScope products work the same way for the functionality

1   we're going to be talking about in this case?

2   A.   Yes, I agree with this.

3   Q.   And can you give us the -- give the jury a quick summary

4   of how you reach the same conclusion as Doctor Brody on that

5   point?

6   A.   Yes, I can.

7   So on this slide I'm showing all seven of the accused

8   products. All seven of these products are compliant with the

9   VDSL2 standard, all seven of these products are compliant with

10   the G.INP standards, and six of these seven--so all except the

11   5031NV--are compliant with the G.bond standard.

12   But in addition to this, I reviewed the source code for

13   these products. These are the standards. I reviewed the

14   source code for the -- according to which these products

15   operate, and in most cases the source code is word-for-word

16   the same between these source codes -- between the source

17   codes. So there are no material differences in the operation

18   of these accused products.

19   Q.   And what does that mean for your infringement analysis?

20   A.   Well, this means that the -- my analysis for one product

21   applies for all of the accused products with the exception, of

22   course, the 5031NV doesn't do bonding.

23   Q.   And did you also rely on the Uber matrices product

24   requirement documents and data sheets we heard earlier about

25   from Doctor Brody?

1   A.   Yes.   The UberMatrix which we know is a product

2   requirements document that's developed essentially jointly

3   between CommScope and AT&T, and it says that the products are

4   compliant with these standards, and CommScope's witness

5   Mr. Miller confirmed.

6   Q.   And in addition to the -- you can go back, sir.

7   In addition to the Exhibit 71 for the UberMatrix for the

8   BGW210--next slide, Professor--do Exhibits 70, 72, 107, and

9   108 in your exhibit binder contain the Uber matrices and

10   product requirement documents for the other models of

11   CommScope products?

12   A.   Yes, that's correct.

13   Q.   And can we look at the data sheet? And for this data

14   sheet, Professor Cooklev, in addition to Exhibit 17 here,

15   does Exhibit 16, 18, 19, 20, 21, and 23 in your exhibit binder

16   contain all the data sheets for these accused products?

17   A.   Yes.   In addition to Exhibit 17 that's shown on the

18   slide, Exhibit 16, 18, 19, 20, 21, and 23 show the data sheets

19   for all seven of the accused products, and they show that all

20   of the accused products operate in materially the same way.

21   Q.   And so if you're going to show the jury evidence today,

22   and most likely tomorrow, from one accused product, does that

23   evidence apply to all of the accused products in the case?

24   A.   Yes, it does.

25   Q.   Okay. Which patent are you going to be discussing first,

1   sir?

2   A.   First I will be discussing the '048 Patent.

3   Q.   And what are some of the technical concepts that you

4   would like to teach the jury before we get into the details of

5   this patent?

6   A.   So there are four technical concepts that are relevant to

7   the '048 Patent that I'd like to explain. The first one is

8   noise, then error correction, interleaving, and shared memory.

9   Q.   And we heard a little bit about noise from Doctor Brody.

10   Can you explain how error correction works to address noise?

11   A.   Yes. So this slide illustrates just the data session

12   between a modem and the equipment at the central office.

13   Well, there's always noise and, in particular, there's always

14   random noise which can impact data in random locations. So

15   something needs to be done about this noise; otherwise, there

16   will be an interruption in service.

17   What is being done is error correction, and this is one

18   way that DSL equipment deals with random noise. In

19   particular, the error correction technique used in the VDSL2

20   standard is called Reed Solomon coding, and the Reed Solomon

21   coding has a parameter called codeword size. And codeword

22   size can be measured in bits, can be measured in bytes. Here

23   I'm showing that codeword size is, in this example, 4 bytes.

24   And so now if we have random noise, as we see here, byte

25   is sometimes also referred to as a symbol, but byte 1c, 2b,

1   and 3a, these are impacted by noise but because error

2   correction is used, the decoder can recover the data, can --

3   from the codewords can obtain the data and in this way be --

4   impact of noise is mitigated.

5   Q.   You can go back to the prior slide.

6   Is there an instance where the noise gets too big that

7   error correction can't fix it, like you're showing here?

8   A.   Yes, there is.

9   Q.   Can you explain that for the jury, please?

10   A.   So sometimes there is a burst of noise. That's a

11   different type of noise. It's a noise event that lasts

12   longer, so it is -- in the sense it's burst noise. And burst

13   noise can impact whole codewords. Not just the example that

14   I'm showing here; the green codeword almost entirely is wiped

15   out by noise, and this renders, once again, coding

16   ineffective. Coding is overwhelmed, and the codeword cannot

17   be recovered, so this leads, again, to service interruption.

18   Q.   Can you explain for us, is there a way to address that

19   burst noise that error correction just can't handle?

20   A.   Yes, there is a way. So now, in turn, to deal with burst

21   noise, what is being done is interleaving. Interleaving is

22   done on the transmitter side. Deinterleaving is done on the

23   receiver side to deal now with burst noise. And the way these

24   operations operate is -- so we see at the -- that the

25   interleaver spreads out the coded data bytes, so now they're

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 1    spread out by a parameter called interleaver depth.  So that

 2    is D.  In this example D is 7.  So the coded data bytes are

 3    spread out by 7 bytes.  Well, at the receiver side, the

 4    deinterleaver puts back together the data in natural order.

 5    Q.   And can you explain for us how this spreading out allows

 6    the system to address these bursts of noise?

 7    A.   So now when we have coding plus interleaving, when there

 8    is a burst noise event, what happens is after deinterleaving,

 9    the burst noise is transformed into random noise, and, well,

10    coding is able to work -- is able to correct the errors when

11    we have just random noise.  So the combination of interleaving

12    and deinterleaving essentially turns the noise into random

13    noise, and coding corrects all of these errors.

14    Q.   Are there any drawbacks to using this type of scheme of

15    interleaving and coding that the '048 Patent was seeking to

16    solve?

17    A.   Yes.

18    Q.   And what were those?

19    A.   So -- now, coding plus interleaving introduces the

20    problem that it requires a lot of memory.  So now that --

21    the Reed Solomon coded data bytes, they need to be stored

22    somewhere, and it requires memory.  And actually it requires

23    memory on both ends of the connection.  There is -- memory is

24    required on the central office side, but now my analysis is

25    focused on the modem side, so the modem needs deinterleaver
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 1   memory to deinterleave what I will be calling -- the

 2   deinterleaver plurality of Reed Solomon coded data bytes in

 3   the downstream direction, and it also requires memory to

 4   interleave another plurality of Reed Solomon coded data bytes

 5   in the upstream direction.

 6   Q.   You have here on the slide upstream and downstream. Does

 7   that mean there's a signal that's downloaded and there's a

 8   signal uploaded that's running at the same time?

 9   A.   Yes. So there is -- downstream data is data from the

10   phone company to the modem, and it's exchanged at the same

11   time as upstream data from the modem to the phone company and

12   then ultimately to the internet.

13   Q.   And can you give us a brief explanation of how the '048

14   Patent solves this memory problem you've been describing?

15   A.   So the '048 Patent provides a technique for memory

16   sharing, so essentially it reduces the memory requirements by

17   half in a device.

18   Q.   And can you show us how that would work, Professor?

19   A.   Yes. In the '048 Patent, as we will see in just a little

20   bit, provides a technique where memory can be shared based on

21   an allocation message. So I'm illustrating here a memory

22   sharing message, which is received by the modem, and based on

23   this memory sharing message, well, some memory is allocated to

24   the deinterleaver and some memory is allocated to the

25   interleaver, and this allocation changes based on the message.

1   Q.   And what is the primary benefit of this type of system?

2   A.   The primary benefit is that it saves chip area. And

3   since the cost of a chip and ultimately the cost of the modem

4   is proportional to the functionality, in other words, the area

5   of this chip, so it -- the savings are ultimately cost

6   savings. The other benefit is that memory can be dynamically

7   allocated to either the deinterleaver or the interleaver.

8   Q.   Can you show us an example of that dynamic allocation?

9   A.   Yeah. So it's -- I can illustrate this with like a knob.

10   So when this memory sharing message is received, as I said, we

11   have -- the modem will allocate one amount of memory to the

12   deinterleaver and another amount to the interleaver, and if

13   it's a different message as a result of receiving a different

14   message, the allocation will be different.

15   Q.   And can you introduce the jury to the '048 Patent?

16   A.   This is the '048 Patent. It's entitled "Resource sharing

17   in a telecommunications environment."

18   Q.   And does this patent relate to the VDSL2 standard?

19   A.   Yes, this patent relates to the VDSL2 standard.

20   Q.   Is it a standard essential patent, Professor?

21   A.   Well, for the issue whether it's a standard essential, I

22   have taken a conservative approach. So as a result of my,

23   again, conservative analysis, strictly speaking, this patent

24   is not essential to the VDSL2 standard, meaning that, well, if

25   one company wants to, if it clearly wants to, it can implement

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 1    the standard and it can be interoperable without implementing

 2    this patent.  Well, on one hand, yes, it's possible, but it is

 3    more expensive, and no company does this.  So companies do

 4    implement the memory sharing technique of the '048 Patent.

 5    Q.   Are you ready to present your analysis on claim 5 of the

 6    '048 Patent?

 7    A.   Yes, I am.

 8    Q.   And are you going to show a chart similar that Doctor

 9    Brody showed this afternoon with the elements here on the left

10    and a checkmark spot here on the right?

11    A.   Yes, that is what I'll be showing.

12    Q.   And, in your opinion, CommScope's products each practice

13    every element of claim 5 of the '048 Patent?

14    A.   Yes.

15    Q.   What is the first claim element you're going to be

16    talking about today, sir?

17    A.   The first claim element is "a system that allocates

18    shared memory comprising."

19    Q.   And do CommScope's accused products practice that

20    element?

21    A.   Yes, they do.

22    Q.   And can you explain to the jury how you got to that

23    conclusion?

24    A.   First, this claim element includes a term that was

25    construed by the Court.  The Court explained what 'shared
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1   memory' means, and I applied the definition provided by the

2   Court in my analysis.

3   Also, to analyze this claim limitation, I am relying on

4   the VDSL2 standard. That's Exhibit 34. And actually the

5   VDSL2 standard says that there is a message that I will

6   explain in just a little bit, but there is a message which

7   specifies the portion of shared interleaver memory. So the

8   standard actually does talk about shared interleaver memory.

9   I've also relied on my testing that I conducted, and the

10   testing shows that, yes, there is shared memory in the accused

11   products. And I am also relying on the source code analysis

12   showing that, yes, there is memory that is shared. Actually I

13   am highlighting a comment from the source code which explains

14   how the source code operates, but the comment says there is a

15   single block of memory available for the interleavers and

16   deinterleavers.

17   Q.   And going into your testing, is this area here that's

18   shaded, is that showing common memory used by at least two

19   functions where a portion of the memory can be used by either

20   one of the functions?

21   A.   Yes. That's exactly what this shaded area shows.

22   Q.   And can you explain for the jury how that is, using

23   allocation 1 and allocation 2 here?

24   A.   So in my testing, in particular I've used two allocations

25   where allocation 1, you know, is the result of data rate 30

1   megabits per second downstream and 30 megabits per second

2   upstream; and allocation 2 is the result of 50 megabits per

3   second downstream and 10 megabits per second upstream. These

4   allocations are very similar to data rates when these modems

5   are actually used in the field. And my analysis showed that

6   the memory is--in particular, the interleaver/deinterleaver

7   memory--that the memory's partitioned, as I illustrate here

8   for the first allocation, and the memory is partitioned

9   differently for the second allocation. So there is a portion

10   of the memory that can be used by either one of these two

11   functions.

12   Q.   And the source code mentioned here at the bottom, that is

13   all in Exhibit 14. Is that right?

14   A.   The source code is in Exhibit 14, yes.

15   Q.   And based on this evidence, were you -- did this show to

16   your satisfaction there was shared memory such that we can put

17   that green check on that first element?

18   A.   Yes.

19   Q.   What is the next claim element you analyzed, Doctor

20   Cooklev?

21   A.   The next claim element is "a transceiver that is capable

22   of."

23   Q.   And, in your opinion, does CommScope's accused products

24   meet that limitation?

25   A.   Yes, they do.

1   Q.   And we heard earlier today -- did you hear earlier today

2   that Doctor Brody had the opinion that the accused products

3   included the transceiver?

4   A.   I did.

5   Q.   And do you have the same opinion?

6   A.   Yes.

7   Q.   And can you explain to the jury how you reached that

8   opinion?

9   A.   I reached this conclusion, again, first by applying the

10   definition of a transceiver that the Judge provided, and then

11   I relied on the standard. Well, the standard calls these

12   devices transceiver units. So the standard does use the

13   word 'transceiver', but -- well, just the standard, that's not

14   quite enough, so I examined the hardware schematic that is

15   Exhibit 13. And the hardware schematic -- I understand on the

16   left there is a figure that is difficult to see, but it's

17   shown on the larger scale to the right. And the hardware

18   schematic is Exhibit 24 for one of the accused products, which

19   is also Exhibit 13, Exhibit 22, 28, and 29 for the other

20   accused products.

21   And the hardware schematic shows that these products are

22   transceivers, as 'transceiver' has been defined by the Court.

23   They are devices capable of transmitting and receiving data

24   wherein the transmitter portion and the receiver portion share

25   at least some common circuitry. And the common circuitry that

1   is shared is -- and we can start with the piece of equipment

2   that interfaces with the phone jack, then the line drivers,

3   the analog front end. So that is circuitry that is shared

4   between the transmitter and the transceiver.

5   Another source of proof for this claim element comes from

6   the -- from a document from Broadcom that is Exhibit 15 for

7   one of the accused products, and Exhibit 30 and 31 for the

8   other accused products. This is shown at the bottom of this

9   slide. And, in particular, this chip schematic identifies the

10   analog front end of the chip.

11   So based on all these sources of evidence, this claim

12   element is met.

13   Q.   And so could we put the green checkmark for

14   'transceiver'?

15   A.   Yes, we can.

16   Q.   What is the next claim element that you analyzed?

17   A.   The next claim element is "transmitting or receiving a

18   message during initialization specifying a maximum number of

19   bytes of memory that are available to be allocated to a

20   deinterleaver."

21   Q.   And, in your opinion, sir, do the CommScope accused

22   products meet this limitation?

23   A.   Yes, they do.

24   Q.   And starting with this portion of 'receiving a message

25   during initialization', can you explain to the jury how you

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1    reached that conclusion?

2    A.    Yes, I can.  This is a little bit long limitation, so I

3    have broken it down into pieces.  Starting with the piece

4    'receiving a message during initialization', so because the

5    claim requires the message to be received during

6    initialization, I begin my analysis by examining the

7    initialization procedure in the standard.  And the

8    initialization procedure is -- includes a number of steps.

9    One of these steps is the channel analysis and exchange step

10   or phase, and in that phase of initialization, there is a

11   message called O-PMS message.  And based on my analysis, this

12   message -- first, it's received during initialization, and

13   also it specifies a maximum number of bytes of memory that are

14   available to be allocated to a deinterleaver.  So I captured

15   the O-PMS message that the modem receives.

16   Q.    Let me stop you there.  The jury may look back and if

17   they see that this entire phrase in their claim construction

18   chart says 'plain meaning', what does that mean?

19   A.    That means that the Court has directed me to apply the

20   plain meaning to this claim term.

21   Q.    And is that what you did?

22   A.    Yes.

23   Q.    And so moving to that next piece, 'specifying a maximum

24   number of bytes of memory', let's start -- starting with the

25   'number of bytes part', can you explain to us how the evidence
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 1    showed you that CommScope's accused products have a -- receive

 2    a message that specifies a number of bytes of memory?

 3    A.    I mentioned the O-PMS message, which is described in the

 4    standard and that I captured during my testing.  Well, here is

 5    what the standard says about this message.  The standard says

 6    that the O-PMS message specifies the portion of shared

 7    interleaver memory that the VTU-R--and the VTU-R is another

 8    term for the accused products for the modems--can use to

 9    deinterleave the downstream data stream.  So -- and this

10    almost exactly says in what the claim requires.

11        And further, in this O-PMS message there is a

12    field -- this is field No. 8.  Field No. 8 is a parameter

13    called max_delay_octet downstream.  First, an octet is a

14    synonym of byte.  Octet is just 8 bits.  And this

15    max_delay_octet is a three-byte field which is the standard

16    says is specified in bytes.  And so a bytes is a number of

17    bytes that specifies memory.

18    Q.    Were you here on Friday, Professor, during CommScope's

19    opening statements?

20    A.    Yes, I was.

21    Q.    And do you remember when CommScope's attorney said the

22    reason that they don't infringe is because memory is not time

23    delay and the standard in their products are time delay?  Do

24    you recall that?

25    A.    I do recall that.
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1   Q.   And does the standard specify a time delay, Doctor

2   Cooklev?

3   A.   No, it doesn't.

4   Q.   And are you alleging infringement on the basis of a time

5   delay?

6   A.   No, I am not alleging infringement on the basis of time

7   delay. The standard clearly specifies memory. And this is

8   also confirmed by my testing and my analysis of the source

9   code.

10   Q.   Moving to your testing, did your testing show that that

11   max_delay_octet field was specified memory or specified time

12   delay?

13   A.   No, it specifies memory.

14   Q.   And can you show that to the jury, please?

15   A.   So here is my testing setup that I described a little bit

16   earlier. And as I said, I captured the O-PMS message. I

17   captured the entire message. And within that message is the

18   field max_delay_octet downstream, and in this example, which

19   is from my testing, this is the graphical user interface that

20   -- it's the software that comes with the test equipment. It

21   says that max_delay_octet downstream is 73,552, which is not

22   -- this is not measured in seconds or milliseconds or

23   microseconds; this is just bytes of memory.

24   MR. HURT: Your Honor, we are about to get into some

25   confidential source code. I'm instructed to seal the

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1    courtroom at this time.

2              THE COURT:  You're requesting the Court seal the

3    courtroom?

4              MR. HURT:  Yes, Your Honor.

5              THE COURT:  All right.  Based on counsel's request

6    and to protect proprietary and confidential information, I'll

7    order the courtroom sealed.  I'll direct the Court Security

8    Officer to affect the sealing, and I will further direct all

9    persons present who are not subject to the protective order in

10   this case should now excuse themselves and remain outside the

11   courtroom until it is unsealed and reopened.

12                        (Courtroom sealed.)

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19   (Courtroom unsealed.)

20   THE COURT: All right, counsel. Please proceed. We

21   are unsealed.

22   Q.   (BY MR. HURT) What is the next patent that you will

23   present this afternoon, Doctor Cooklev?

24   A.   The next patent is the '411 Patent.

25   Q.   And, in general, what does the '411 Patent relate to?

1   A.   The '411 Patent relates to retransmission.

2   Q.   And can you give us -- explain for us in a brief tutorial

3   how retransmission works as it relates to the '411 Patent?

4   A.   So retransmission is another way -- another technique

5   with which the modem deals with this burst noise. So in the

6   retransmission case where we see a stream of packets sent to

7   the modem, well, inevitably there is noise on the line, and as

8   a result of this noise, a packet will be corrupted to an

9   extent that it won't be able to be successfully received, and,

10   as a result, well, the modem will say 'please retransmit'. So

11   the modem will send a request to the -- on the other end of

12   the connection, the central office will say 'please

13   retransmit', in this Case No. 5. So this is a simple

14   technique. And the packet No. 5 will be retransmitted.

15   Q.   What are some of the drawbacks from retransmission that

16   this patent -- the '411 Patent was directed to solve?

17   A.   So the problem is, once again, that retransmission

18   requires quite a bit of memory to operate. Well, and it

19   requires a lot of memory because packets need to be -- first,

20   they need to be stored in memory. In this case these packets

21   all are stored.

22   Now, packet No. 5 is -- in this simple example is the

23   packet that is not successfully received, so the modem will

24   say 'please retransmit packet No. 5'. Well, but in the

25   meantime it needs to store all of these packets and it needs

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 1    to store packets that is transmitted after packet No. 5 while

 2    it's waiting for the fifth packet to be retransmitted.

 3    Q.   And why does the system need to do that; to hold all

 4    those packets while it's still waiting for No. 5?

 5    A.   It needs to store all of these because in the end it

 6    needs to put back the packets in their natural order when it

 7    forwards them to a software application.  So when these

 8    packets are forwarded to whatever software application is used

 9    on the computer, they need to be forwarded in the proper

10    order.

11    Q.   And does that storing that you showed, is that something

12    that can take up a lot of memory?

13    A.   Yes, it can.  It can require a lot of memory to store

14    these packets.

15    Q.   And how did the '411 Patent address that memory problem?

16    A.   So the solution to this memory problem that this time is

17    generated by the retransmission technique is a shared memory

18    with -- based on an allocation message.  So it's -- and it is

19    the same memory sharing message, but now the meaning of this

20    memory sharing message is broadened to include also

21    retransmission, as I will be explaining in a little bit.  So

22    based on this memory sharing message, now memory is shared

23    between the portion that is allocated to retransmission and a

24    portion allocated to interleaving/deinterleaving.

25    Q.   And what is the benefit of this approach?
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1   A.   Well, the benefit is similar to the benefit of the '048

2   Patent, but memory is a large component of the chip area, and,

3   therefore, a component of the cost of a product. So that's --

4   that is a benefit of the '411 Patent.

5   Also based on this memory sharing message, memory can be

6   efficiently allocated so that it's allocated dynamically,

7   based on need to either retransmission or interleaving/

8   deinterleaving.

9   Q.   And does the '411 Patent relate to any standards?

10   A.   Yes, it is generally related to the VDSL2 standards and

11   also the G.INP standards; what's also called impulse noise

12   protection.

13   Q.   And is this patent essential to G.INP or VDSL2?

14   A.   Well, just like I testified earlier for the '048 Patent,

15   the issue whether or not a patent is essential, I've adopted

16   the conservative approach regarding this question. So,

17   strictly speaking, the '411 Patent is not essential because it

18   is possible -- again, it is possible to build equipment that

19   is compliant with the standard that doesn't use shared memory.

20   I mean, one could do that. But implementors don't do that;

21   they use the most efficient way, which is the right design

22   approach. So that is my answer to the question.

23   Q.   Are you ready to discuss claim 18 of the '411 Patent?

24   A.   Yes, I am.

25   THE COURT: Before we do that, this may as good a

Shawn M. McRoberts, RMR, CRR
Federal Official Court Reporter

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 1   juncture as any to stop for the day, ladies and gentlemen.

 2   We'll get into the specifics of that claim first thing in the

 3   morning.

 4        I'm going to ask you, ladies and gentlemen of the jury,

 5   to take your notebooks with you and leave them closed on the

 6   table in the jury room overnight.  I'll remind you to follow

 7   all my instructions, including not to discuss the case with

 8   anyone else, including the eight of yourselves.

 9        Please travel safely to your homes.  You did a great job

10   of being ready to go this morning.  Lets's try and do it just

11   like that again tomorrow morning.  We'll try to start as close

12   to 8:30 as possible.

13        So with that, ladies and gentlemen of the jury, you are

14   excused until tomorrow morning.

15             (Whereupon, the jury left the courtroom.)

16             THE COURT:  Be seated, please.

17        Counsel, according to my records, the Plaintiff has used

18   a total of 6 hours, 15 minutes, and 31 seconds of its

19   designated trial time, and the Defendant has used 3 hours and

20   33 minutes and 40 seconds of its designated trial time.

21        I'm going to remind you to scrupulously observe the

22   Court's directions with regard to your overnight meet and

23   confer efforts.  I'll expect prompt and fulsome reports, as

24   previously directed, unlike what happened over the weekend.

25   We've already discussed that in chambers.  I anticipate we
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1   will have better performance going forward.

2   I mentioned to Mr. Barton and Mr. Davis over the last

3   recess that I'd like you to review again the remaining

4   objections on Doctor Cimini. Several of those do not appear

5   to me to be particularly meritorious, and I am convinced you

6   can narrow those objections considerably, if not resolve them.

7   So I want you to do that as well overnight.

8   Are there questions from either Plaintiff or Defendant at

9   this point before we recess for this evening?

10   MR. DAVIS: No questions, Your Honor.

11   MR. BARTON: Nothing from us, Your Honor.

12   THE COURT: I'll be in chambers tomorrow morning, as

13   is my custom, by 7:30. We can take up any overnight disputes

14   that are not resolved through your meet and confer efforts

15   then.

16   Have a good evening, counsel. We stand in recess until

17   tomorrow morning.

18   (The proceedings were concluded at 6:15 p.m.)

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1   I HEREBY CERTIFY THAT THE FOREGOING IS A

2   CORRECT TRANSCRIPT FROM THE RECORD OF

3   PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.

4   I FURTHER CERTIFY THAT THE TRANSCRIPT FEES

5   FORMAT COMPLY WITH THOSE PRESCRIBED BY THE

6   COURT AND THE JUDICIAL CONFERENCE OF THE

7   UNITED STATES.

8

9   S/Shawn McRoberts   03/20/2023

10   _____DATE_____
      SHAWN McROBERTS, RMR, CRR
11   FEDERAL OFFICIAL COURT REPORTER

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